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VOLUME 52 • NUMBER 12 • AUSTIN, TEXAS

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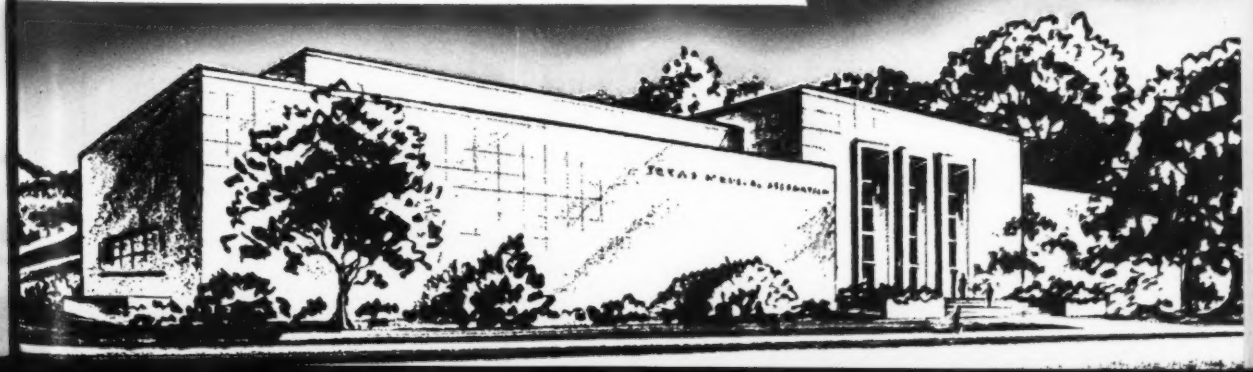

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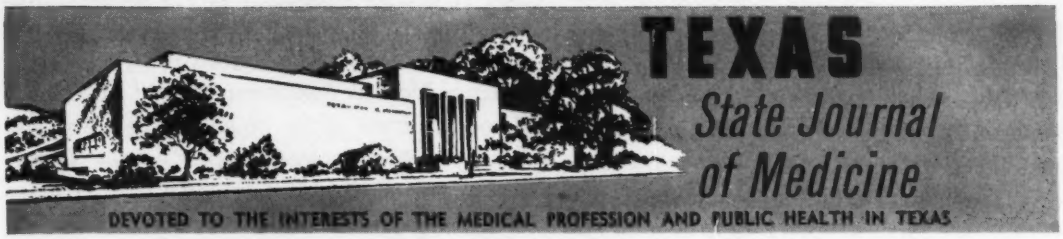

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Anson Jones Award For Medical Reporting

During the last decade, there has been an increasing liaison, interest, and understanding between the fields of journalism and medicine. Medical reporting has become an area of extreme importance in journalism, and more and more reporters are maintaining a high degree of accurate scientific reporting. In appreciation of these facts, the Texas Medical Association has established an Anson Jones Award to be presented annually for "distinguished accurate lay medical reporting."

In initiating the Anson Jones Award, the Association gives recognition to a physician, a journalist, a statesman, and the last president of the Republic of Texas. I believe that the present day medical reporter should emulate the intellectual integrity, the lucid style, and the methodical, clearheaded approach which Dr. Anson Jones applied to every problem, whether that of writing, practicing medicine, or guiding the Republic of Texas through the most difficult days of its history.

The Association's Committee on Public Relations has been aware of the growing need for cooperation between the fields of medicine and journalism for some time. Recently, one step toward furthering the understanding between the two professions was evident in the second annual public relations conference held in conjunction with the Executive Council meeting last September. Dick West of the Dallas *Morning News* was a guest speaker, and his talk, "The Doctor and the Press," was well received. Also as a

part of the conference one of the three problem clinics was on doctor-media relations.

One point stressed at this conference was the value of personal contact from the standpoint of both the doctor and the reporter. The set-up for the Anson Jones Award provides the local tie-in for the newsman and the county medical society, since entries are to be submitted by the editor to the county society president. But of course, the over-all public relations value that can result from the presentation of this award is of primary importance.

The scope of the Association's public relations program is so broad that it may seem to some physicians that we are "scattering our shot too thin" or that we have nothing original that has not been done on a national level or by some other state association. I would like to point out several notable exceptions to this, however, such as the doctor distribution survey and publicity in Texas, our Medical Student Day programs, and now our Anson Jones Award, the first winner of which is to be announced in conjunction with the January Executive Council meeting. The suggestion for this award was made by Dr. Lyman Blair, Houston.

I solicit your support in making the award known and in suggesting eligible candidates for it to your county society. I believe this award will help the growing bond between journalism and medicine.

—WILLIAM M. CRAWFORD, M. D.
Fort Worth, Texas.

Library Memorials Live

The most recent of a series of large donations to enhance the value of the Memorial Library of the Texas Medical Association, both intrinsically and as a service facility for Texas doctors, has been a gift of $1,000 by the Ophthalmic Research Foundation of Austin in tribute to the late Dr. Sam N. Key. It was the expressed wish of the donors that this gift be used to help create a Library memorial for Dr. Key, and additional contributions from other sources already have been received for the Key Memorial. Dr. Key, former member of the Texas Medical Association's Board of Trustees and chairman of its building committee, had such a deep personal interest in the Library and gave so freely of his wise counsel in its development that the memorial is an especially fitting one for him.

Contributors of large gifts to the Library, many of which have been given as memorials, will be honored in ceremonies planned for the week-end of January 26-27, when the Executive Council will meet, a Conference for County Medical Society Officials will be held, and a Symposium on Legislation will be conducted in Austin.

Recognition of those whose efforts have strengthened the Library is appropriate at this time because during the ceremonies, the twenty-five thousandth volume will be presented to the Library, an acquisition which will class it as a major medical library. The book marking this milestone in the growth of the Memorial Library is "De Re Medicus" of Cornelius Celsus, dated 1528 and 1529, presented in honor of the late Dr. Sam E. Thompson of Kerrville, another Trustee and an Association President whose continuing enthusiasm for the Library was shown in monetary support and faithful friendship. At the same time another rare book, a first edition of "Experiments and Observations on the Gastric Juice, and the Physiology of Digestion" by William Beaumont, dated 1833, will be given in memory of Dr. Key. Further information about these two volumes appears in the Library section of this *Journal.*

There is much to be said for "living memorials," those which continue to serve humanity after the one paid tribute is no longer able himself to serve. For a doctor who has kept abreast of the sometimes breath-taking progress of his chosen field to heal the sick, no better memorial could be chosen than a library to

which others of his profession may turn for help in carrying on the best traditions of medical practice. In acknowledging these larger contributions, the Memorial Library of the Texas Medical Association also expresses its appreciation of the numerous smaller donations and expressions of support that come to it. All of these added together, plus the actual use of available services, will make the Library the really valuable adjunct to medical service in this state which men like Dr. Key and Dr. Thompson have believed in.

First Indoctrination Program Scheduled

The idea of indoctrinating new members of organized medicine is not new to Texas. For as many as ten years an indoctrination program has been given on the local level and now plans for the first such program on the state level are being developed by the Texas Medical Association's Committee on Indoctrination for presentation in Austin on January 26.

The program, designed to help new members be aware of their responsibilities and obligations to organized medicine and to point out what they may expect from their affiliation, is to be given at the Association's headquarters building, Austin, in conjunction with the Executive Council meetings each year in September and January. Attendance at one such session during a 24 month period of provisional membership is required before a provisional member may be granted regular membership.

In the hope that an indoctrination program on the state level will strengthen the county unit, the Board of Councilors proposed amendments to the Association's By-Laws to make it possible. It was generally agreed that the idea of indoctrinating new members (including transfers) has merit, but the manner of carrying it out—by individual county societies or on the state level—presented varying opinions. After thorough consideration, the House of Delegates adopted the amendments last April, so all new members of the Association would receive indoctrination. It is not to be construed that the establishment of the state indoctrination program will eliminate the effective county society programs already in existence; rather, it will supplement them. It was pointed out to the House that of 116 county societies more than 100 groups cannot carry on an effective program of their own because of their small size, and results of a *Journal* questionnaire conducted in July indicate that only 4 societies out of approximately 50 reporting had an indoctrination program for new members.

The beginning of the state indoctrination program represents another effort by the Texas Medical Association to be of assistance to its members and to strengthen the medical profession now and in the future. With an expected membership in 20 years of 10,000 more doctors than at present, it is in the best interest of every physician that each new man learn as thoroughly as possible the information offered at such meetings. Both the new doctor in practice and the medical profession as a whole will benefit from his day in Austin.

Best Wishes for the Season

A Forward Step

What can Texas do to improve the care and treatment of her mentally ill? Are our mental health facilities being utilized to their fullest extent by the state and the community? What should be the immediate and long range steps taken to develop and insure for Texans the best in preventive and treatment measures?

These are a few of the questions that are being tackled by Dr. Francis J. Gerty, professor and head of the Department of Psychiatry at the University of Illinois College of Medicine, Chicago. He has accepted an appointment as consultant for the analysis of mental health conditions in Texas; the Texas Medical Association's Committee on Mental Health initiated this plan, and $9,000 for the project has been made available by Texas philanthropists.

Financially, this is a sound investment. At the present, there are about 16,000 mentally ill persons in state supported hospitals. One out of every 12 Texans will need care in a mental hospital sometime during his life. With modern intensive therapy and proper follow-ups on released patients, 80 per cent of all first admissions can be returned to their homes and communities within a year. This rate means a saving in tax dollars as well as in human productivity. The patient load, however, will not adjust itself to fit the facilities available; the facilities must be adjusted to meet the needs of the patients.

Dr. Gerty already has conferred with the Committee on Mental Health and with the Legislative Budget Board; he assured the latter group that he would finish his consultation in time to present his recommendations to the next legislature. He has studied all recent surveys relating to mental health in Texas, and has traveled to Texas to interview key leaders in this field. It is expected that he will propose an optimum program, especially in the area of state mental hospitals. His proposals also will include suggestions for mental health societies, foundations, and similar groups to adopt in both prevention and adequate follow-ups on a local level of patients who have been in mental hospitals. This may include recommendations to provide regional consultation services supported by the community and the state.

It may not be feasible to follow all his recommendations immediately, but they will provide goals toward which to work in the improvement of health care for Texans. The leadership of the medical profession in this area is of urgent importance, and the support of the donors contributing to the project is welcomed as an encouraging sign.

A Year of Change

The 1956 volume of the *Journal* has been one of almost constant change and growth, based in large measure on the results of a questionnaire sent to all members of the Association in January. As an indication that the change may have been for the better, in a recent competition sponsored by the Society of Associated Industrial Editors, of which the *Journal* is a member, several consecutive copies were rated excellent in 32 categories, good in 17, and poor in none. The New York judges, nationally known experts on the typography and editing of industrial and association publications, commented, "It is very hard to get writing quality in contributed articles, but these are surprisingly good."

There have been 95 scientific articles published in volume 52, as compared with 91 last year. During 1956, a total of 1,192 pages of reading matter almost dwarf the 856 pages published the previous year. Two issues have been devoted to material from Texas medical schools, and in the November issue, the first clinicopathologic conference appeared. With the continued help of Texas doctors, more such articles will be forthcoming.

In addition to scientific articles, physicians contribute to the editorial section of the *Jour-*

nal, conveying their thoughts and opinions to their colleagues. The Journal Advisory Committee is eager to have material submitted for consideration, whether it be editorial or scientific. Scientific articles should be of wide general appeal and as brief as the subject matter permits. Space, the number and topics of papers already on hand, and the subjects of papers already published are other considerations in selecting material for publication. A new year is beginning—why not satisfy your desire to write up that interesting case, or to submit the paper you already have prepared?

Manuscripts and suggestions for the *Journal* may be addressed to the editor, 1801 North Lamar, Austin.

Dependent Medical Care

The dependents' medical care program, placed into operation on December 7 in compliance with legislation enacted by the Eighty-Fourth Congress, is certain to have a vital effect upon the private practice of medicine.

More than 2,000,000 dependents of military personnel are eligible for medical care under the provisions of Public Law 569. Texas, with its large military installations, is a key state in this new federal program.

Dependent medical care already has produced considerable controversy. The program will be scrutinized even more carefully in the months ahead, not only by physicians in areas near military installations, but by all practitioners in other communities throughout the state who will treat wives and children of servicemen stationed at distant bases.

The program is designed to provide a higher quality of medical care through the utilization of civilian medical facilities and doctors in private practice. That objective is commendable and should be achieved.

With better medical care available to dependents, the Department of Defense has anticipated that the program will be a factor in reducing the present high turn-over of skilled personnel in the armed services. Civilian authorities in personnel management are not nearly as optimistic of this attainment. Fringe benefits, such as medical care, usually are not as well received as a larger paycheck which would enable the recipient to increase his purchasing power of all desired commodities.

It is possible that several favorable by-products of the program might materialize. A segment of medical care previously furnished by the military now can be channeled back to civilian hospitals and to doctors in private practice. This is expected to result in a lessening demand for physicians in the armed forces, with the anticipated expiration of the doctor draft act on June 30, 1957, without request for its reenactment. Through the utilization of community hospitals, it is conceivable that the need for military medical facilities might be reduced in the years ahead.

It also should be acknowledged that the program embodies the principles of free choice. The patient may pick the doctor he wishes. The physician will maintain his traditional right of selection of patients, and, if he prefers, he may elect not to participate in the program.

But unfavorable aspects of the program are even more apparent. The federal government will spend a minimum of $50,000,000 annually, including an estimated $600,000 in medical fees in Texas, to subsidize care for military dependents. These expenditures will add substantially to the increasing tax burden of the nation.

The "medicare" program is one of full service coverage, with fees for physicians' services to be paid by the government in accordance with a published schedule of allowances in most instances, the doctor will receive payment for his usual charge or the amount established in the state schedule of allowances, whichever is less. This directive is not compatible with the time-honored privilege and right of every

individual doctor of medicine to decide for himself whether or not a fee offered by a third party shall be accepted by the physician as payment in full for his professional services to the patient.

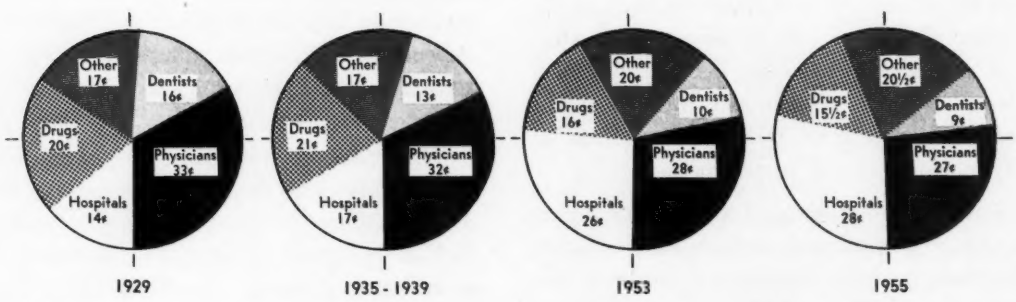
The government not only will pick up the check for actual medical and hospital services, but also the cost of administering the program. It will pay as much as $4 in administrative costs in some states for each individual medical service which is rendered. The federal government is not noted for efficient and economical administration, and it is evident already that the dependent medical care program will be no exception.

Designation of two fiscal agents—not one—and the separation of payment of hospital and medical bills will add considerably to the expense of administration. Blue Shield has been selected as the fiscal agent by many state medical societies, including Texas. However, because of an arbitrary executive order, Blue Cross will not be permitted to serve as the fiscal agent for hospitals in the central portion of the country. The latter assignment will be handled by commercial insurance companies. Independent fiscal administration of the hospital and medical phases of the program is certain to be much more expensive than a joint operation.

Of even greater concern, the dependent medical care program will contribute to the trend toward "big government," and will undermine further the democratic philosophy of free enterprise. This federal innovation is certain to have an adverse effect upon the private practice of medicine. The principles of this program likely will be extended eventually to include old age pensioners, those who are disabled under the social security act, and others. A plan of medical service for federal civil service employees, perhaps somewhat similar to dependent medical care, probably will be considered by the Eighty-Fifth Congress when it convenes in January. And obviously, as the federal government pays a larger portion of the cost for health and medical care, the prospects for the complete nationalization of medicine will become even greater.

Better medical care for dependents of those in the armed forces undoubtedly will result from the program. But, as the Texas Medical Association's policy-making body, the House of Delegates, has emphasized, it would have been far better to provide more sufficient stipends for servicemen, thus enabling them to pay for the medical care of their dependents, in line with the philosophy of free enterprise.

THE MEDICAL CARE DOLLAR



The graphs depict the decreasing portion of the medical care dollar going to physicians and dentists in the United States while the portion going to hospitals increases. In 1955, for the first time, the annual personal consumption expenditures of the American people for hospital services ($3,130,000,000) exceeded those for physicians' services ($3,070,000,000). (Information supplied by the Bureau of Medical Economic Research of the American Medical Association, based on material from Survey of Current Business.)

President's Page

—AND A HEALTHFUL NEW YEAR!

As he turns from a busy office and hospital routine for recognition of the Christmas season, your President will be thinking with deepest gratitude of his high privilege of working with so many fine people—Texas physicians and their wives. When we observe the birthday of the Great Physician, it is fitting to expand our thinking to include others, as did He—our families and all those who share responsibilities with us in medicine and in civic affairs.

Being merry at Christmas and at all times is Biblical therapy, for we read in Proverbs 17:22, "A merry heart does good like a medicine!"

So may this Christmas season bring much true happiness to you and yours, and may the bright new year of 1957 be the best and healthiest of your life.

COUNTY SOCIETY OFFICERS SET THE PACE!

The activity and achievements of any county medical society may be measured by the ability, industry, and devotion of its elected officers. And the work of individual county societies has much to do with the functioning of district and state associations as well as of the American Medical Association. The Texas Medical Association and the AMA have multiple worth-while services for you, but you will not get the maximum benefit from them unless your county officers give you aggressive leadership.

Election as president or secretary at a county level is not just an empty honor or a chore, but is an expression of the confidence of your professional confreres that you will devote the time and effort necessary to make your society a valuable facility to physicians and a dependable guide in health matters in your community.

Likewise, committee chairmen and individual committeemen have great opportunities and responsibilities. The most capable and enthusiastic president and secretary will be handicapped without the wholehearted cooperation of every member of every committee.

Fortunately, hard work brings its compensation in the personal satisfaction of seeing a job well done. So, as new officers start out

in 1957, may they plan and work with that devotion and industry that will insure a satisfying inventory of achievement when December rolls around again.

"Thinking together means proper planning. Working together brings progress. Staying together brings success!"

TOO BUSY OR TOO INDIFFERENT?

The other day when 13 members of the Texas Medical Association were at a conference, a quick poll showed that only three had started polio vaccine immunization on themselves. Practically all of the other 10 had been planning to take the Salk vaccine, but just had not taken the time as yet to get their own inoculations under way.

The noticeable drop in the incidence of polio in 1956 is scientific proof of the value of the immunizations. There has been relatively little decrease in incidence among adults, however, because youngsters had priority when the supply was limited. Recent press reports indicate that enough vaccine is available now for 17,000,000 inoculations.

The best way to forestall further encroachment by federal agencies in the field of free vaccinations to individuals who are perfectly able to pay for services by their private physicians, is for every doctor to take the lead in preventive medicine in his own community. This means using the polio vaccine on himself and his family, and then advising all his patients and friends, old and young alike, to avail themselves of the protection offered by the Salk preparation. The physician also has a responsibility to remind his patients to carry through with the full series of three inoculations.

Here lies a wonderful opportunity for constructive work by public health committees of county societies. Most effective work will be done when such a committee outlines a program of health education, using the local press, radio, and television as well as various ethical ways of individual reminders. Lay organizations will not be encroaching in a community where the county medical society accepts its responsibility properly.

One excellent resolution for the new year is to make sure that you and yours take polio vaccine – but you can start in December!

Milford O. Rouse, M.D.

ORIGINAL ARTICLES

Principles Of Primary Care Of the Injured Hand

JOSEPH H. BOYES, M. D.

Los Angeles, California

PRIMARY definitive care of the injured hand can be summarized in two words: protect and repair. Protect the wound from infection and the hand from added disability; repair the wound itself and repair the damaged structures. Too often an injury of the hand is looked upon as an injury to a tendon or nerve. The hand is an organ of grasp, sensation, and expression. Treatment of the hand as a whole should be our first aim.

Dr. Joseph H. Boyes, assistant clinical professor of surgery, University of Southern California, presented this paper for the Section on General Practice in Galveston at the 1956 Annual Session of the Texas Medical Association, April 24.

Too much emphasis has been placed upon tendon and nerve repair, forgetting that the primary reason for the surgical care of an injury is to prevent infection in the wound. The problem of repair of flexor tendons under certain conditions, as applied particularly to the damage to flexor tendons in the fingers, is covered. Different types of wounds of the hands are classified, illustrating how this affects judgment as to the proper treatment.

It is important in a discussion of any treatment of the injured hand to distinguish between the treatment of the wound itself and the treatment of damage to the underlying tendons, nerves, and other structures.

PROTECTION OF WOUND

Protection of the wound is the first and most essential feature in the primary treatment of the injured hand. The wound is a portal of entry for infecting organisms and therefore must be protected from further contamination. First aid dressings should consist of clean, preferably sterile, cloth applied to the wound with a compression bandage. The indiscriminate use of antiseptics, probing, inspection, and examination of the wound itself by unmasked personnel is dangerous and useless. The wound should be covered and kept so until definitive treatment is carried out in the operating room under aseptic conditions. Examination of a hand can be carried out in most instances without inspection of the wound itself, and evidence of damage to the underlying tendons, nerves, and other structures can be determined by adequate examination of the peripheral parts.

REPAIR OF WOUND

Permanent protection of the wound from further contamination is best accomplished by closure of the wound. This should be done after a thorough cleansing with bland soap or pHisohex and water, followed by careful rinsing with sterile water. Brushes are not used, and strong cleansing agents such as ether and benzene are kept from the wound. This protection of the wound means a definite surgical procedure and not a first aid measure. It is the prime requisite in treatment of the injured hand and must be accomplished in all cases before any other procedure can be considered. This is easily accomplished in sharp incised type of wounds and in most lacerated wounds. In the avulsed type of wound and crushing injuries in which there is already considerable swelling, it may be necessary to close the wound with a skin graft, and for these cases split skin grafts taken from the forearm or the thigh are easily applied. Any surgeon treating injuries of the hand should be ready and able to accomplish the ordinary split graft. Sometimes the wound of the hand is such that a good base for a skin graft is not present; for example, loss of skin over a joint, bone, or tendon leaves an area which is not easily covered by skin. Therefore, local single pedicled flaps can be used to cover these vulnerable areas and the split skin graft applied to the

nearby donor region. In the case of large areas of denuded or avulsed skin a pedicle flap from the anterior abdominal wall can be used advantageously. The most important point is complete closure of the wound.

PROTECTION OF HAND

Protection of the hand from added disability is the next step in the primary treatment. This disability is the stiffness and deformity that follow when the hand is not properly immobilized and dressed. After any injury, even the slightest, there is swelling and edema. Immobilization, compression, and elevation are indicated. Left by itself the hand assumes a nonfunctioning position with the wrist in palmar flexion, the fingers in extension at their metacarpophalangeal joints, and the thumb at the side in the plane of the palm instead of with the wrist dorsiflexed, the fingers semiflexed, and the thumb opposed to the tips of the fingers—the normal functioning position. This position can be maintained only by splinting and dressing properly. Examination of hands for possible reconstruction after injury shows that the majority have some deformity which is directly attributable to the lack of appreciation of this factor.

If at the time of the primary treatment of the injured hand there is evidence of damage to the underlying structures and if at that time we can assure ourselves that primary closure and healing of the wound can be obtained, then under certain conditions immediate repair of the damaged structures can be carried out. What are these conditions under which primary repair of the other structures can be made? To answer this question, we must know more about the various factors involved. These factors can be divided into those concerning the wound and those concerning the facilities for repair.

EVALUATION OF WOUND

Evaluation of the wound requires that we know the time elapsed since the injury, the amount of contamination, the type of wound, and the location of the wound. The amount of time elapsed since occurrence of the wound combined with the amount of contamination as determined from the history can help us decide upon the probability of obtaining primary healing. Wounds vary considerably in the amount of contamination depending upon whether they occur in clean surroundings or in a markedly contaminated environment. Time enters into the consideration because the longer the interval between wounding and cleansing of the wound, the more chance there is for contamination to have changed to infection by invasion of the organisms into the damaged tissues.

The type of wound also enters into consideration. A crushing wound in which there is considerable damage to the soft tissues and laceration of blood vessels is followed by edema and swelling which may be the factors which will prevent good primary healing. With crushing types of wounds in which we know considerable scarring will occur, we cannot expect the type of healing that is necessary for the proper repair of tendons and nerves. The last factor, the location of the wound, is important in dealing with damage to the flexor tendons. Here we distinguish three zones in the hand. In each of these three zones, primary repair of the damaged flexor tendon will have to be varied in the type of technique used.

EVALUATION OF FACILITIES

When the factors concerning the wound are known and have been evaluated as to the possibility of obtaining primary healing, we must consider the facilities which are available for the definitive care which will be necessary. What are these facilities? These should include an adequate operating room, instruments of size comparable to the parts upon which the work is to be done, adequate anesthesia, an assistant, and some experience and knowledge of the detailed structures and technical features of repair of the parts of the hand.

The primary repair of the important structures of the hand is not a procedure to be done in some first aid room. A major operating room should be used with adequate facilities and aseptic surroundings. The tools and the instruments necessary for surgery of the hand are not specialized to any extent but should be small in size since we are dealing with small and delicate gliding mechanisms. Anesthesia must be adequate. Ordinary local infiltration is unsatisfactory in the proper treatment of an injured hand of any severity. General anesthesia most likely would be used in any major procedure. One assistant is essential in order to hold the hand and present it for the proper treatment by the surgeon. The detailed and specific anatomy of the hand is such that constant review is necessary to maintain our knowledge of the fine points of location and course of the structures. Attempted primary repair of the tendons and nerves of the hand is not a procedure to be carried out by the occasional surgeon. It would be much better in the cases in which even the factors of the wound would justify primary repair but in which some of the factors in the facilities are lacking that the skin itself be closed and the hand immobilized in a func-

tioning position and a secondary elective procedure be carried out at a later date.

Assuming that all the previously mentioned features of the wound and the facilities have been evaluated and it has been decided that primary repair of the deeper structures can be carried out, how do we with some semblance of order and planning go about carrying this out so that adequate function will be restored?

First, all operations on the hand are done under the ischemia of a tourniquet. A simple blood pressure cuff placed around the upper arm inflated to 300 mm. of mercury can be left in place for an hour and one-half to an hour and three-quarters without any danger of ischemic changes in the forearm. If the hand and arm are first elevated or if the blood is expressed from the arm by wrapping it with a rubber bandage, a perfect bloodless field is assured, visibility of the small structures is improved, and the trauma of repeated sponging is prevented. The finer branches of the nerves can be seen and freed from their surrounding tissues and repaired. The use of a tourniquet in operations on the hand can be said to be the one absolute essential unchangeable feature of all surgical procedures.

After thorough excision of the wound under the ischemia of the pneumatic tourniquet, the deeper structures are repaired. It is important that the skeleton be restored to as near normal alignment as possible. This usually can be done by manipulation and immobilization maintained by splinting in the functional position or by judicious use of internal fixation. A small Kirschner wire used to transfix the metacarpals or used as longitudinal fixation is convenient. Dislocations of joints are reduced. Joint ligaments are not ordinarily sutured unless necessary to control the dislocation. Even then a few tacking sutures of fine absorbable materials are all that is necessary. The musculotendinous structures are restored to anatomic position with the exception of tendon injuries in specific areas as I will discuss later. In the presence of incised types of wounds primary nerve repair can be carried out with assurance of good return of sensory and motor function. In crushing wounds or those with considerable laceration, primary approximation of the nerve with one fine nonabsorbable suture can be done to maintain position and prevent rotation and shortening until secondary repair is done.

Tendon injuries are common. Extensor tendons are repaired with figure of eight wire sutures passed through the skin, with immobilization being carried out by splinting to relax the tension upon the approximated tendon ends. The suture is removed at the end of three weeks. Immobilization is continued for one week longer, and then gentle active motion under protection is begun.

Flexor tendon injuries must be divided into three types depending upon the zone of the hand involved. The zone between the middle crease of the palm and the level of the middle joints of the fingers is no man's land, the area where primary repair is almost impossible. Even in the most ideal cases the results are usually not satisfactory, and it is best in these cases to approximate the skin and plan upon a secondary reconstruction at a later date. Distal to this zone where only the profundus tendon is present, primary repair can be accomplished. If the laceration is within 1 cm. of insertion, advancement of the tendon can be done. The distal severed end of the tendon is drawn down in the finger and approximated to the denuded base of the terminal phalanx with a pull-out wire suture. If laceration is more than 1 cm. proximal, advancement of the tendon usually will result in a flexion contracture. Here approximation of the two severed ends of the tendon can be made with a fine stainless steel wire suture buried within the tendon or used as a pull-out suture. These lacerations usually occur in the area of the pulley in the middle segment of the finger, and the pulley should be excised. If the proximal end of the tendon has retracted into the palm so that it is slipped between the bifurcation of the sublimis, it is almost impossible to rethread it, suture it to its distal end in the finger, and still obtain a useful functioning finger. In this case, function of the sublimis tendon is normal and only the profundus action is lost. Therefore, it is recommended that the distal portion of the tendon be attached to the middle phalanx with the distal joint in slight flexion, thus providing a tenodesis. This can be done as a primary or a secondary procedure. In the proximal zone of the hand, that is, from the middle crease of the palm up to and including the wrist, repair of the profundus flexor tendons is carried out with standardized core suture as described by Bunnell. The sublimis flexor tendons are repaired only in certain instances.

SUMMARY

The principles of primary care have been outlined. These are protection of the wound from contamination and protection of the hand from added disability. Protection of the wound is accomplished by skin closure, if necessary with graft or flap. Protection of the hand is done by proper dressing, splinting, and immobilization.

Repair of deep structures of the hand is secondary to the treatment of the wound. The indications for primary repair have been stated and the factors of the wound type and location as well as the evaluation of the facilities for repair have been noted.

Flexor tendon repairs, varying in type dependent upon the location, have been discussed.

The principal aim of primary care is treatment of the wound. Only if this can be assured are we justified in attempting a more detailed repair of damaged underlying structures at the time of injury.

Dr. Boyes, 1401 South Hope Street, Los Angeles 15.

Correction Of the Deviated Or Scoliotic Nose

WILLIAM K. WRIGHT, M. D.; FRED R. GUILFORD, M. D.; and W. LEONARD DRAPER, M. D.

Houston, Texas

DEVIATED or scoliotic deformities of the nose are fairly common. In addition to the disfiguration, there may be impairment of nasal physiology and function from associated deformities of the nasal valves and septum.

Dr. William K. Wright and his co-authors prepared this paper for presentation before the Section on Eye, Ear, Nose, and Throat on April 24, 1956, at the Texas Medical Association Annual Session in Galveston.

Straightening of the deviated nose is one of the most difficult problems in nasal surgery. It involves mobilization and repositioning of such parts of the external pyramid as are involved, as well as mobilization or resection with replacement of the involved parts of the septum. The etiology, basic principles, and surgical technique of this procedure, together with the physiologic concepts involved in the reconstruction, are included.

Surgical correction of this condition has certain special problems. The septum actively supports the nasal dorsum, and when submucous resection is combined with the weakening effect of readjustment of the external nasal pyramid, saddling of the dorsum may result. Fear of this complication has led most surgeons to attempt to correct the septum and external pyramid in two separate operations.

However, there are disadvantages to the two stage procedure also. The scoliotic deformity is maintained in position by both the septum and the external pyramid. If only one of these structures is corrected, the spring of the uncorrected structure tends to distort the correction and reproduce the original deformity.

Contributions to the handling of this problem have been made by Becker,[1] Cottle,[2] Fomon,[3] and others. There is no one stereotyped procedure applicable to all situations, but, with proper technique, we believe it is possible to carry out safely a one stage correction.

ETIOLOGY

Scoliosis of the nose may arise from developmental or traumatic causes. Developmental causes consist of heredity, prenatal pressure, and injury at birth or very early in life. The nose becomes increasingly crooked, because of suppression or stimulation of the growth of one side of the nose. Growth pressure of the developing ethmoid plate, vomer, or maxillary crest may cause buckling of the septum. In this type, the cartilaginous septum is still on the maxillary crest and vomerine groove. Both bone and cartilage are deviated (fig. 1).

Fig. 1. Developmental deviation of the nose before and after correction. Both the bone and cartilage are deviated.

Traumatic origin in a nasal deformity is recognized by dislocation of the cartilage from the vomerine groove and maxillary crest or by scarring, reduplication, and overlapping of the septal cartilage. Three types of traumatic deformities can be recognized as follows:

1. The lateral type of deformity results from a lateral blow buckling and dislocating the septum and moving the nasal dorsum to the side away from the blow (fig. 2a).

2. The depressed type of deformity is caused by

a frontal blow resulting in saddling and the widening of the nose and crushing of the septum, with scarring, fragmenting, and reduplication of the septal cartilage (fig. 2b).

Fig. 2. The three types of traumatic deformities are illustrated, with and without correction. They are the lateral type (a), the depressed or frontal type (b), and the laterofrontal type (c).

3. The laterofrontal type of deformity is a combination of the lateral and depressed types previously mentioned (fig. 2c).

THERAPY

Proper reduction of the acute nasal injury is the easiest and the preferable therapy for traumatic deformities. However, the reduction must be carried out before the fracture has healed in malposition. Reduction consists of elevation and slight separation of all fragments of the septum and nasal bones. These fragments should be slightly separated from each other and then molded into position; fixation is accomplished by intranasal packing and an external splint.

The framework of the cartilage and bony external pyramids, with its supporting septum, is such that once developmental or traumatically acquired deformities are established, they are much more difficult to correct.

Reconstruction of the normal nasal anatomy requires elevation of the soft tissues and mobilization of all the rigid structural components of the nose from their base attachments, as well as from each other. Repositioning, trimming, and fixation allows healing in normal position. Extreme deformity of one of the structural components may require comminution of the structure, or resection and replacement of the structure, to affect a restoration of normal contour.

PROCEDURE

The patient is premedicated with barbiturates, Demerol and scopolamine. The vibrissae are clipped and, after a Phisohex and Zephirin preparation, sterile drapes are applied. Anesthesia is accomplished with cocaine flakes on Adrenalin soaked cotton tipped wire applicators to block the anterior nasal, spenopalatine, and incisive nerves. Two per cent Zylocaine with 1/25,000 Adrenalin is used to infiltrate the dorsum, around the nasal apperture, the base of the nose, columella, and septum. This not only gives essentially perfect anesthesia but also usually produces a good hemostasis during the operative procedure.

Intercartilaginous incisions and a transfixtion are done, and the soft tissues and periosteum are elevated over the upper lateral cartilage and nasal bones.

Septal mobilization and straightening are carried out through the transfixion. In mild deviations this can be accomplished by gridding, crosshatching, and removing slivers from the cartilage to break its spring, and by fracturing the maxillary crest into place without separating the osteocartilaginous junction. This usually requires elevation of only one septal flap. If the cartilage is dislocated from its bony groove or if the osteocartilaginous junction is thick, it may be necessary to elevate the opposite septal flap and resect the overlapping, reduplicated, or thickened part.

Spurs or ridges and scar tissue are also shaved or resected. In this correction it is desirable to leave a dorsal and caudal strip of cartilage intact. The caudal strip prevents retraction of the columella. If it must be sacrificed, strips of septal cartilage should be implanted in front of and behind the medial crura in the caudal end of the septum, between the septal

flaps. The dorsal strip prevents saddling of the cartilaginous dorsum. If it is necessary to sacrifice this dorsal strip of cartilage, saddling may occur either immediately or several weeks later. The delayed effect can be prevented by replacing straight pieces of bone and cartilage between the septal flaps to break up scar contraction. Immediate saddling can be compensated for only by filling up the space between the sagging cartilaginous dorsum and the skin of the nasal dorsum, so that the external profile is reestablished. This is done with slivers of septal cartilage, which can be placed through the intercartilaginous or transfixion incision. Multiple thin slivers mold well and stay in place better than one piece. Since they are autogenous, they will not absorb. Occasionally, immediate saddling in the presence of a hump can be handled by removal of the residual bony hump with a saw or Kazanjian forceps, thus reducing the entire profile to a more pleasing level, which has been reached by the saddling (fig. 3). In a few

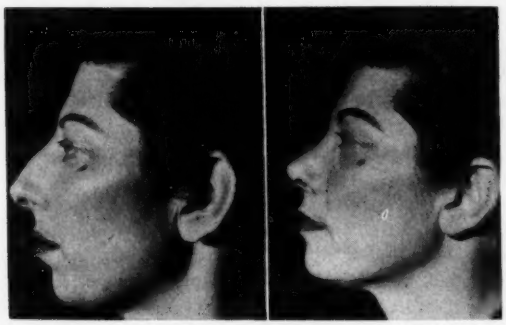


Fig. 3. Hump removal to compensate for saddling from submucous resection.

other cases this situation can be handled by shortening the nose and bringing the lower lateral cartilages over the saddled area.

The external bony pyramid is mobilized at its junction with the septum and at the nasofacial angle. The midline separation is made with an osteotome introduced intraseptally under the nasal bones. If one septal flap is not elevated, the division is made extramucosally on that side. The bony pyramid is mobilized laterally, via alar or vestibular incisions, after elevation of the periosteum. It should be done at the nasofacial angle and extended as high as the inner canthus. This is never a straight line; therefore, we believe it is best done with an osteotome rather than with a saw. If the nasal bones have any localized irregularities from the old fracture, they should be comminuted with a chisel or by doing the lateral osteotomy before dividing the nasal bones in midline. The cephalic attachment of the nasal bones and frontal spine are then fractured by finger pressure, and the nose is straightened. After this has been done, if there is any asymmetry due to one of the nasal bones being longer than the other, the long side is trimmed off with a Kazanjian forceps. Any hump which is present also may be fragmented or removed at this time, if desired.

Straightening of the bony vault frequently will correct the deviated lower cartilaginous portion which is attached to the nasal bones. If there is residual deviation, the upper lateral cartilage also may be divided in the midline and the excess trimmed from the long side. Should this become necessary in the presence of an extensive septum resection, the support of the nasal dorsum is weakened, and saddling may occur. In this situation it may be possible to straighten the cartilaginous vault with only an incomplete division of the upper lateral cartilages. Should complete severance be necessary, the upper lateral cartilages should be reattached to the septum with sutures after they are equalized. Sometimes the residual scoliosis can be equalized by lateral freeing of the upper lateral cartilages, via the intercartilaginous incision, leaving the midline support intact. If saddling does occur during any of these maneuvers, it is corrected by filling in the space between the skin and the nasal framework with multiple thin slivers of autogenous septal cartilage.

At this time if the lobule is incorporated into deformity, the lower lateral cartilages are freed from the skin via a rim incision. The spring is broken by gridding and by division of the cartilage at the dome, but without cutting through the vestibular skin. The bulbous portion is trimmed off and a wedge is cut from the higher or wider side.

In the mobilization procedure, any tendency of the base of the nose to settle or widen may be overcome by mattress sutures gathering the columella base, or by an interalar base stitch around small pieces of bone. Occasionally nostril wedges (Weir excision) may be necessary.

The incisions are closed with 0000 chromic catgut. Silk is applied to the skin. The rim and intercartilaginous incisions are left open for drainage. The sutures may be either interrupted or mattress sutures. Corrective sutures (orthopedic and the like) are not dependable for anything but very minor corrections, as they rapidly cut through tissues until they are loose.

The final packing should have a small amount of Aureomycin ointment impregnated in it to prevent odor and to aid in pack removal. It is packed fairly firmly under the upper lateral and lower lateral cartilages and gently molded into position. It is also placed along the septum if extensive resection has been carried out and under the nasal bones if they were comminuted. Packing under the nasal bones stops intranasal drainage and increases the orbital ecchymosis. Any pack which is placed under the nasal bones or between the turbinates must be ex-

tremely loose, or swelling of the turbinates and soft tissues will cause pressure sufficient to spread the nasal bones.

The external splint consists of tape and a dental modeling compound applied over flannel padding. The splint is left on one week, and the tape is kept on two weeks, although it may be necessary to change the tape because of skin irritation. Packs are usually removed in one week and nonabsorbable sutures in 10 days. Tape is much less irritating to the skin if it is sterilized and if tincture of benzoin is applied to the skin before placing the tape.

CONCLUSION

The scoliotic nose constitutes one of the most difficult of all corrective procedures performed on the nose. We have attempted to discuss its etiology and correction. These methods have given us uniformly satisfactory results, with a minimum of trouble.

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♦ Dr. Wright, Dr. Guilford, and Dr. Draper, Hermann Professional Building, 6410 Fannin, Houston 25.

No Wonder Drugs For Old-Timers

The great bulk of medical charges about 1844 were not for medical services, but for drugs, if evidence in a journal of that year kept by Dr. John S. Ford, who practiced in San Augustine, is typical. Compound Blue Mass Pills apparently were sold at the rate of four for 50 cents; this was the most commonly dispensed drug noted in the journal, and Dr. Ford prescribed it 22 times in treating 94 cases. Quinine, dispensed 11 times, was another favorite; others listed in his journal are Cough Mixture, Cal & C, Calomel, Ipecac, and Citrini Ungt. The last item was prescribed for the itch of the last vice-president of the Republic of Texas. Less frequently, Dr. Ford used Dovers Powders, Paregoric, Equivater, Nitro-Muriatic Acid, Nitric Acid, Ungt. Basilicone, Calc. Magnesia, Hartshorne, Elix. Vitriol, Tart, Ant., Bitters, and Morphine. Among drugs used only once during a nine month period were Corrosive Sublimate, Antacid Mixture, Carbonate Potash, Emetic, Sal Rochelle, Sulphur ppt., Squill Pills, Myrrh, Balsam, Tinst., Cantharides, Febrifuge Pulvules, Iodine, Ergot, Lobelia, Tartar Potash, Tartar Emetic, Camphor, Cook's Pills, Laudanum, Astringent Pills, and Antidysenteric mixture.

Photostatic copies of Dr. Ford's journal are in the Texas Archives, Barker History Center, University of Texas, Austin.

—Dr. J. M. Coleman, Austin.

Polypoid Degeneration of The Nasal Sinuses

Complications and Management

CLAUDE D. WINBORN, M. D.

Dallas, Texas

POLYPOID degeneration of the nasal sinuses is not an uncommon condition in our everyday practice, but it is commonly poorly or neglectfully managed. Undoubtedly because of the slow development in chronicity of the condition, the patient can hardly remember when he did not have disagreeable nasal symptoms, and he has been encouraged to accept the disability. That this condition is potentially danger-

Dr. Claude D. Winborn presented this paper for the Section on Eye, Ear, Nose, and Throat, April 24, 1956, at the Annual Session of the Texas Medical Association in Galveston. He is chairman of the Department of Otolaryngology of Southwestern Medical School, University of Texas.

Polyposis of the nasal turbinates and ethmoid cells may be diagnosed readily, but if the condition is extensive, the antrums and sphenoid sinuses should be investigated. These cavities are usually filled with polyps and subject to infection. Local steroid and allergic therapy gives good results in early and limited cases, but if the sinuses are packed, surgery is advisable.

ous is readily seen when one realizes that in almost all of these cases there is a residual chronic infection in the depths of the polypoid and hyperplastic masses in the antrum, ethmoids, and sphenoid.

The latest concept, supported by the work of such investigators as Hansel, Schenck, and Kern, is that this multiple polyposis occurs in a perennial allergic rhinitis. The appearance of the mucous or edematous polyp is characteristically a smooth, rounded, pale or grayish pink mass which occurs singly or in large numbers. The polyps are usually multiple and bilateral, and when in large numbers they may fill the nasal cavity producing characteristic nasal ob-

struction and possibly headache from pressure and improper drainage.

The delicate stroma in the sinus cavities and around their ostia allows a marked and continued edema in chronic allergic states. Apparently by the action of gravity, it forms the typical sac attached with a pedicle which may hang from these areas into the nose or fill the sinus cavity dilating its ostia before presenting into the nose. Large choanal polyps practically always originate within the antral cavity and are typically recurrent unless completely evulsed from their attachment. The expanding character of these space occupying tumors eventually causes a breaking down of the intracellular bony wall in the sinus cavities. In a condition in which the antrum, ethmoids, and the sphenoid cavities are completely filled with polypoid masses which interfere with proper drainage, superimposed infection occurs without exception. It is virtually impossible to control satisfactorily this type of condition by allergic management and polypectomy. Perhaps the role of recurrent infection accounts for the occurrence of polyps in the small percentage of patients with vasomotor rhinitis.

Complications of chronic polyposis are usually on an infectious basis and therefore follow the classification of complications of sinus infections. Most common of these is chronic bronchitis and possibly bronchiectasis in the very young. Since asthma is commonly associated with the condition, undoubtedly vital capacity is lessened later in life by the pulmonary damage of chronic suppuration.

Next in frequency are the local extensions by pressure, necrosis, and secondary infection. The lamina papyracea of the ethmoid frequently becomes dehiscent along with the ethmoid cell walls and provides a pathway for the development of an orbital cellulitis and abscess. It is surprising that orbital complications do not occur more frequently when one remembers that the orbital wall is common with the antrum as well as the ethmoids.

A more minor condition resulting from multiple polyps is the widening of the external nasal pyramid. This is fairly common in the more cartilaginous parts. A recent case was treated in which the nasal bones had been separated undoubtedly early in life and polyps were present under the skin and mucosa of the nasal roof.

We are all concerned with the management of these cases by more conservative office care. However, it is only in the earlier cases in which there are relatively few polyps or polypoid changes that reasonably good results may be expected. It has been variously estimated that the vasomotor rhinitis group comprise 70 or 90 per cent of clinical chronic sinusitis with only a small percentage of this group being atopic or of the antigen-antibody type. The remainder must be of that less easily defined group which is caused by such factors as changes in temperature and humidity, emotional tension, and possibly the endocrines.

Most of us do not do our own allergy studies, but I am certain this practice would be well worth while if we had the time and temperament to conduct them properly. In some instances, good results are obtained by conventional therapy, such as injections and elimination of certain types of food. Regardless of how excellent the results, these patients should be followed at reasonable intervals year by year, since polypoid changes may recur. The severe irreversible cases do not develop rapidly. In fact, many years may be required for the sinuses to become completely packed with polyps and hyperplastic tissue. Although the youngest patient in my group was 16 years of age, the average age of the remainder was around 40 years.

Considerable clinical experience has been accumulated with the use of ACTH and cortisone, both parenterally and locally. These agents do not cure anything, but they may be expected to bring about symptomatic relief until more conventional therapy can be instituted. One may obtain a partial regression of nasal polyps by a short intensive course of cortisone and ACTH, but there will be a regrowth of polyps unless the treatment is continued.

Hansel has expressed the belief that it is important to institute or to continue antigenic stimulation with such agents as house dust and Staphylococcus toxoid while using parenteral ACTH and cortisone. The effect of the toxoid in this instance is nonspecific and appears to increase tolerance to the allergen. Many clinicians use toxoid extensively in the control of subacute infections in patients with an allergic background, and they may use ACTH and cortisone if allergic management and toxoid do not give proper response. Many of these patients respond remarkably to intradermal doses of .1 to .01 unit of Staphylococcus toxoid at three to five day intervals.

Cortisone solutions have been found to be effective when applied locally to polypoid tissue. Burger and Shaffer conducted a "double blind" test in which the agents were numbered instead of labeled. By means of plastic spray containers, one group of patients received a placebo and an equal number of hydrocortisone solution. They concluded that "Although there was a consistent reduction in size or disappearance of nasal polypi, there was no marked alteration of nasal exudate or change in histological appearance of polypi after therapy." Using hydrocortisone acetate in their tests, they reported the stronger solutions to be more effective. Silcox, using hydrocortisone alcohol, and Grader, using fluorinated hydrocortisone, reached similar conclusions in regard to polyps. In my experience, topically applied hydrocortisone has been disappointing in more severe polyposis; how-

ever, it has successfully reduced the size of small nasal polyps but must be continued until the rhinitis is controlled by other means. Its effect on vasomotor rhinitis and seasonal allergy was negligible. There is no apparent advantage in any one of the many commercial preparations over the others of equal strength.

Conservative management of the advanced polypoid degeneration is only temporary value. I cannot recall a single instance in which the total sinus space was filled with polyps that allergic treatment was of any permanent value. It is true that the airway may remain patent for long periods after removal of polyps, but the sinuses continue with little change. If the sinuses are exenterated along with all the mucous membrane, the resulting healed cavity will not be one which reacts to its environment by polypoid changes. Allergy treatment may be necessary only in improving nasal physiology.

The frontal sinus is rarely involved with polyps and will care for itself if its duct is patent. The ethmoid cells and the antrum are the principal source of disease whereas sphenoid involvement is more variable. The entire polypoid mass therefore may be removed through a Caldwell-Luc approach, cleaning out the ethmoid and sphenoid sinuses through the antrum.

The Caldwell-Luc and transantral ethmosphenoidectomy is the operation of choice in pansinusitis where the frontal sinus does not need surgery. The middle turbinate, which frequently is sacrificed in the external operation, is preserved leaving little or no change in the physiology of the nose. I am confident that the ethmoid cells can be removed as thoroughly by this approach as by any other route.

CONCLUSIONS

Too often the treatment of polypoid degeneration of the nasal sinuses is influenced by a resigned attitude of both the patient and his physician. Before the disease becomes extensive, real and lasting improvement may be brought about by hormonal and allergic treatment. When the sinuses become filled with polyps, nothing short of exenteration will be sufficient to control the disease. The Caldwell-Luc and transantral ethmosphenoidectomy is the procedure of choice.

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◆ Dr. Winborn, 101 Doctors Building, 3707 Gaston Avenue, Dallas.

ABSTRACT OF DISCUSSION

DR. HERBERT H. HARRIS, Houston: There are several things I wish to emphasize in dealing with polypoid degeneration of the nasal sinuses. First, I do think that many of the polyps which arise in the nose arise from the ethmoid sinuses as well as the maxillary sinuses. Unless the ethmoid sinuses are exenterated at the time, there has been no definite treatment. One well knows that the lymph drainage from these infected membranes must come through the ostia since there are no lymphatics which perforate the bones. This being the case, once a polyp forms it rarely ever reduces itself, particularly in allergic patients.

Second, I wish to mention the problem of exenterating the anterior ethmoid sinuses by the transantral approach. This anterior group of cells cannot often be removed unless an intranasal approach is carried out at the same time.

I wish to point out also that the use of hydrocortisone nasal sprays following surgery on these cases often, in my opinion, does help some patients as it prevents formation of the edematous tissue which sometimes follows surgery, keeps down granulation tissue, and prevents the scarring which sometimes takes place forming pockets.

Radiation Protection

E. F. GLOYNA, Dr. Eng., and J. C. RUDE, M. D.

Austin, Texas

IT IS THE PURPOSE of this paper to indicate some of the advances that have been made in the use of radiation; show trends in equipment usage; discuss faulty shielding and construction methods; and reemphasize personnel protection, particularly as pertaining to x-ray and radium shielding as used by the general practitioner. Basic examples in shielding deficiencies are illustrated.

Protection is usually a problem in shielding. Shielding basically involves judicious regulation of (1) quantity of energy of active beam, (2) distance from the source, (3) absorption the beam undergoes between the source and receptor, and (4) the exposure time.

Radiation, as discussed in this paper, occurs as a result of either nuclear or extranuclear adjustments. A normal peacetime development is assumed. Disaster radiation, or that which might occur as a result of a global conflict, is not considered.

There is a general increase in the amount of radiation equipment produced and amount of radioactive isotopes used. This increase is partially due to more x-ray units, nuclear power development, and utilization of radioisotopes. There are also more x-ray units

E. F. Gloyna, Dr. Eng., is associate professor of sanitary engineering, The University of Texas, and his co-author is radiologist, Brackenridge Hospital.

Radiation equipment is increasing in amount and usage. Those working with radiation and those in contact with it incidentally need protection. Improperly constructed door systems, inadequate overlap of lead shields, faulty protection around corners especially near utility ducts, and inadequate protection around light plugs and structural members may be particularly hazardous.

in hospitals, industries, and pseudotherapeutic establishments. Radioactive isotopes in food and drink are generally negligible, but the background levels are undoubtedly increasing. The medical profession is now using more radiation both in liquid and fixed source operations. Exposures for physicians, technicians, nurses, and other hospital attendants are increasing as a result of both a greater usage and employment of higher levels of energy. Industrial participation ranges from small quantities of radioactive isotopes to large multicurie radiographic facilities. As research continues, much more radioactivity will be available.

It is logical to assume that eventually a significant number of our population could be subjected to levels of radiation which need more than superficial supervision. Converse to the international problem where potential nuclear radiation poses an immediate lethal dose for the body, the peacetime community is concerned with the effects of increased amounts and repeated doses of radiation together with the gradual increase in the sustained or background radiation level.

SOURCES OF RADIATION

Radiations (including roentgen rays, gamma rays, beta particles, alpha particles, and neutrons) not only are of importance in occupational health but some day may pose rather widespread public health problems. The problem at the present, however, from a general public health point of view, still remains to a large degree with the external radiation devices. Scientists, physicians, technicians, patients, and bystanders are still the critical foci as far as radiation protection is concerned. In many cases the potential danger of the radioactive isotopes has helped to awaken the larger establishments and users of x-ray and radium to reevaluate existing facilities and handling procedures. However, rarely in the smaller establishment as illustrated by the x-ray machine in the general practitioner's office is the equipment calibrated or the shielding, if any, checked.

X-Ray.—With regard to diagnostic radiology[8] the tendency is to go to units of 100 kilovolts or higher whereas 90 kilovolt or lower voltage machines have been the most popular. Thus there is some increase in the voltage and therefore in the risk unless the shielding is also changed. X-ray therapy units also have gone up in voltage. Whereas few places had more than a 200 kilovolt unit, there are now many 250 kilovolt units and some of 2,000 kilovolts.

Interestingly enough, x-ray equipment owned by hospitals has not increased over the years in milliampere capacity.[10] However, with physicians in private practice, the trend is towards higher amperage units. In 1940, 8 per cent of all x-ray equipment owned was in the 200 milliampere size. In 1950, 1951, 1952, and 1954, this increase to 12, 16, 19, and 27 per cent respectively. This increase appears to be primarily among the general practitioners.

Statistics released by the General Electric Company show the trend in greater usage in x-ray equipment throughout the United States.[2] The percentage of all physicians in general practice owning x-ray equipment has been steadily increasing. It is estimated that about 50 per cent of the physicians will have some form of x-ray units by 1964. This estimate, 73,600 x-ray units, represents almost a 100 per cent increase in the number of x-ray units for 1964 as compared to 1949. Only 47,305 x-ray units were owned by physicians in 1954. The number of x-ray machines owned by dentists is also increasing. During a five year interval, 1948-1953, there was a 20 per cent increase among the dental units. In 1953 dentists owned 67,063 x-ray units. The x-ray ownership among "other practitioners of the healing art" has also increased about 80 per cent (fig. 1). Sixty-nine per cent of the chiropractors owned x-ray uuits in 1952.

There were about 20,577 x-ray units of all types owned by hospitals in 1945. This was an average of 3.5 units per hospital. It is expected that the number of hospital units will reach almost 31,000 by 1965. Of this number, about 70 per cent are diagnostic units and 30 per cent are therapeutic units.

Teletherapy Treatment and Radiographic Inspection.—Much of the radioactivity of industrial or medical importance is encapsulated "source" material. A sealed source such as radium-226 (Ra^{226}), cobalt-60 (Co^{60}), iridium-192 (Ir^{192}), strontium-90 (Sr^{90}),

cesium-137 (Cs^{137}), and europium-152 (Eu^{152}), are being used or show promise. The most famous and least respected of these is radium. However, now there are at least 10 radioisotopes that can be produced with sufficiently high energy whereby they can replace radium and possibly challenge therapeutic x-ray equipment.

	TOTAL IN U. S.	1952 % X-RAY OWNERSHIP	No. OF X-RAY MACHINES OWNED	% PURCHASED SINCE 1945	INCREASE IN No. SINCE 1945
OSTEOPATHS	11300	54	6102	76	4638
CHIROPODISTS	5500	74	4070	80	3256
VETERINARIANS	13000	46	5980	80	4784
CHIROPRACTORS	13500	69	9315	74	6893

Fig. 1. Ownership of x-ray machines among certain types of practitioners.

Co^{60}, one of the most promising radioisotopes, may be regarded as a source of monochromatic gamma rays of mean energy of 1.2 million electronvolts.[1] A 100 curie source of Co^{60} is equivalent to about 163 Gm. of radium.[4] In comparison, the common radium applicators in hospitals are made up in 100 to 200 mg. units, and the total amount in industry is only about 50 Gm.[5, 11] Telecobalt irradiators, 1,000 curies or more, are approximately equal both qualitatively and quantitatively to 2 million electronvolt x-ray machines. The stable end product is nickel-60 (Ni^{60}), and therefore no worrisome problems are encountered such as the gaseous radon from radium decay. The acceptance of Co^{60} has led to a certain standardization in the design and construction by x-ray companies in both this country and Europe.[7] A number of cobalt units that give off the equivalent of better than 2,000 kilovolts of x-ray radiation are now in use. Such units are becoming more popular among industrial establishments and large medical centers.

Cobalt and cesium sources probably will be used more if readily available. These materials are the primary reasons for the reduction in use of radium for industrial radiography. The use of either of these, however, is controlled much more rigidly than x-ray or radium. The Atomic Energy Commission must approve all installations, and if the source of material is to be used for either diagnostic or therapeutic reasons, the material must be under the supervision of a diplomate of the American Board of Radiology.

Radioisotopes.—Radioactive materials other than those which are encapsulated are available and are being used. Texas is one of the leading users of radioactive isotopes. A total of 162 industrial firms and institutions were using radioisotopes as of 1955. Medical institutions and physicians constituted about 45 per cent of this total.

Some gradual build-up in the atmosphere and on the surface of the land has been reported by the Atomic Energy Commission. The accumulative fallout over Texas from weapons tests up to January 1, 1956, has been about 100 millicuries, beta activity, per square mile.[3] This is roughly equal to 30,000 curies over the entire state. The number of people involved in the use of radioactive materials is increasing each day, but it has been estimated that only 1 in 300 isotopes users exceeds the present day maximum permissible dose in a given week. As yet the radiation problem is not serious nor does it affect a great number of people.

The concentration of radioisotopes in the air and waste streams will increase as the amount in use increases. Most of the extremely toxic isotopes such as Sr^{90} will not be intentionally released, but from a realistic point of view some will escape the best of laboratory control. In a research laboratory the amount used may be very low, but a more general increase is obvious. The maximum permissible concentration for continuous exposure purposes for Sr^{90} is 2×10^{-10} microcuries per milliliter in air and 8×10^{-7} microcuries per milliliter in water. As an example of the magnitudes involved, the concentration of strontium produced by disbursing 1 Gm. of Sr^{90} in 100,000,000 gallons of water is approximately two parts per trillion (2.65×10^{-6} parts per million), a concentration that could be neglected for most purposes. Nevertheless, such a solution would have an activity several hundred times the tolerance for radiostrontium in drinking water.

Fortunately, much has been learned regarding the concentration of these small amounts by finely di-

vided suspended matter. As a result much of the material which gains access to a water or air stream will never reach the human body. Modern methods of treating water and waste water also aid in the removal of many radioactive isotopes. Natural processes involving siltation, coagulation, and sedimentation are all at least partially effective in removal. Biological processes involving aquatic plants and animals also will concentrate these materials and in many cases help to detain these potentially dangerous particles over a sufficiently long time to effect decay.

SHIELDING

Defects.—Shielding for radioisotope users is reviewed fairly well by the Atomic Energy Commission; however, this is not the case for x-ray and radium users. Errors or mistakes in shielding design may be discovered, but all too often equipment and technique changes are made without regard to original design. In these cases defects can be ascertained only after properly surveying the entire primary and secondary barrier system.

Even though an original design for installation is entirely adequate for shielding, construction defects

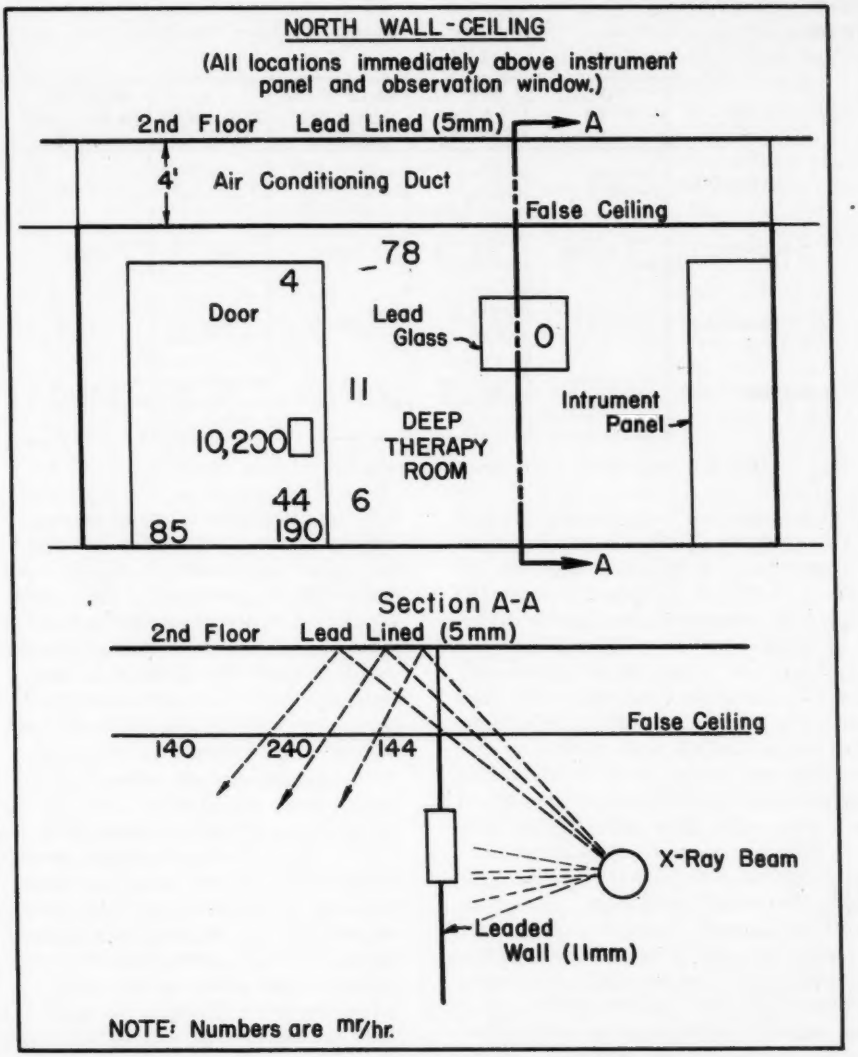

Fig. 2. Diagram showing x-ray scatter through unshielded air conditioning ducts.

may be glaring. Some of the defects which appear most frequently are (1) improperly constructed door systems, (2) inadequate overlap of lead block or lead sheets, (3) faulty protection around ceiling and wall corners especially where heating and air conditioning ducts are a part of a false ceiling, and (4) inadequate protection around light plugs and structural members.

Doors are frequently mishandled during construction so that shielding becomes ineffective. Figure 2 shows how a door was partially ruined during construction. The locksmith in placing the lock removed a relatively large area of the lead shield. The lead in the door is 11 mm. in thickness. Also the carpenter in hanging the door failed to obtain a proper fit. In this case it was possible for the direct x-ray beam to focus on the technician and the visitor-waiting area. This would have resulted in a radiation exposure in excess of 10 r per hour. Leakage around the door and through the bottom of the door varied from 4 to 190 milliroentgens per hour. This situation was remedied by restoring the lead in the lock systems, placing an external type lock on the door, and adding leaded flanges on the inside face of the door. The tests were made using a 200 kilovolt x-ray unit. However, the design for the shielding was made under the assumption that the present machine would be traded for a 250 kilovolt unit. This slight increase in voltage considerably increases the amount of barrier required.

Incorrect placing of lead blocks presents another problem. The placing of these blocks is tiresome work and requires almost constant supervision. Several examples have been found of inadequate overlap. In some cases as much as 1 to 2 inches of open space between leaded blocks has been found.

Air conditioning ducts also present a particularly difficult problem. The scatter effects occurring over one air conditioning duct also are shown in figure 2. In this case the overhead lead was placed on the floor in the room immediately above the x-ray unit. The lead was 5 mm. thick and extended 18 inches past the room boundaries. The air conditioning duct was 4 feet deep, and when the x-ray beam was pointed towards the corner of the ceiling, considerable scatter occurred. This condition was remedied by extending the lead below the air conditioning duct and into the x-ray room a suitable distance.

Another example involves a 250 kilovolt unit. Several important points can be demonstrated from figures 3 through 5. Figure 3 shows that more than 2 r per hour were recorded at the base of the door to the x-ray room (room 132). The entrance door contained an unleaded lock system and also a faulty alarm system. The lead had been removed for the lock, and the x-ray machine did not automatically cut off when the door was opened during operation. The wall between the x-ray room and the diagnostic room (room 133), was only partially shielded. In this case the attendant in the diagnostic room usually stood near the crack (fig. 4). At the light plug about 600 milliroentgens per hour were recorded when the beam was focused on the wall. Scatter radiation into room 138, which was an adjoining office, produced about 20 milliroentgens per hour near one of the desks. Figure 5 shows the radiation as measured in the yard. The exterior wall contained no lead shielding. Since a contemplated new building will be about 4 feet from the unshielded wall, a point on designing for the future can be illustrated with this example. The reduced distance may result in unnecessarily high radiation levels in the new building.

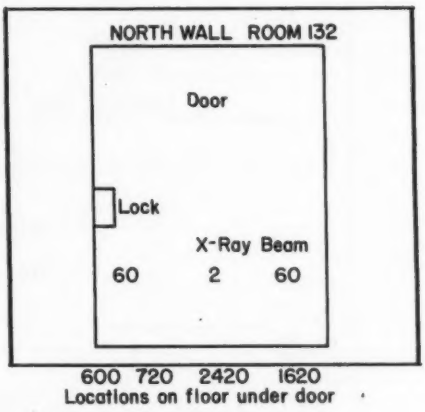

Fig. 3. Diagram showing leakage of x-ray under a door into the hallway.

Factors in Control.—It is not just a matter of being fashionable to discuss the shielding defects and operating practices employed in the use of ionizing radiation. The fault is not with the major equipment manufacturers. They usually include a copy of the pertinent National Bureau of Standards Handbook with every piece of major equipment. Then where does the blame, if any, lie? The blame probably rests with one or all of the following: architect, engineer, contractor, general physician, radiologist, technician, and responsible agent of the local health department. Design records are all too often lost, and higher powered equipment frequently replaces the lower powered units without consultation of the original shielding specifications, assuming that such were made. Physicians and x-ray technicians frequently become too careless in personal exposures or do not bother even to check the radiation levels.

Perhaps the engineers and the radiologists should work out a common color code. For example, if one wall of a deep therapy room is not shielded, it could

be painted with an imposing color such as red. This would be a continuous reminder to everyone using the x-ray unit that direct beams should not be focused on unshielded walls. This selective positioning would reduce the direct radiations considerably since the scatter radiation at a point 1 meter from a scattering surface is about 1 per cent of the level of the incident radiation at that surface.

Shields are required when working with all x-ray and most radioactive materials. Some authorities consider that a factor of safety of 10 may be used in all shielding designs.[6] The United States Bureau of Standards[12] defines the permissible exposure for x-rays as 0.30 r per week, measured in air. The work week is taken as six full 8 hour days, or 48 hours. It is customary, for barrier computations, to assume uniform exposure over a working week. It should be recognized, however, that this is not necessarily a tolerance dose. It is not known that the body can tolerate any radiation. It is also advisable to compute all barrier thickness requirements for a full 8 hour day. For design of shields involving therapeutic work, the maxi-

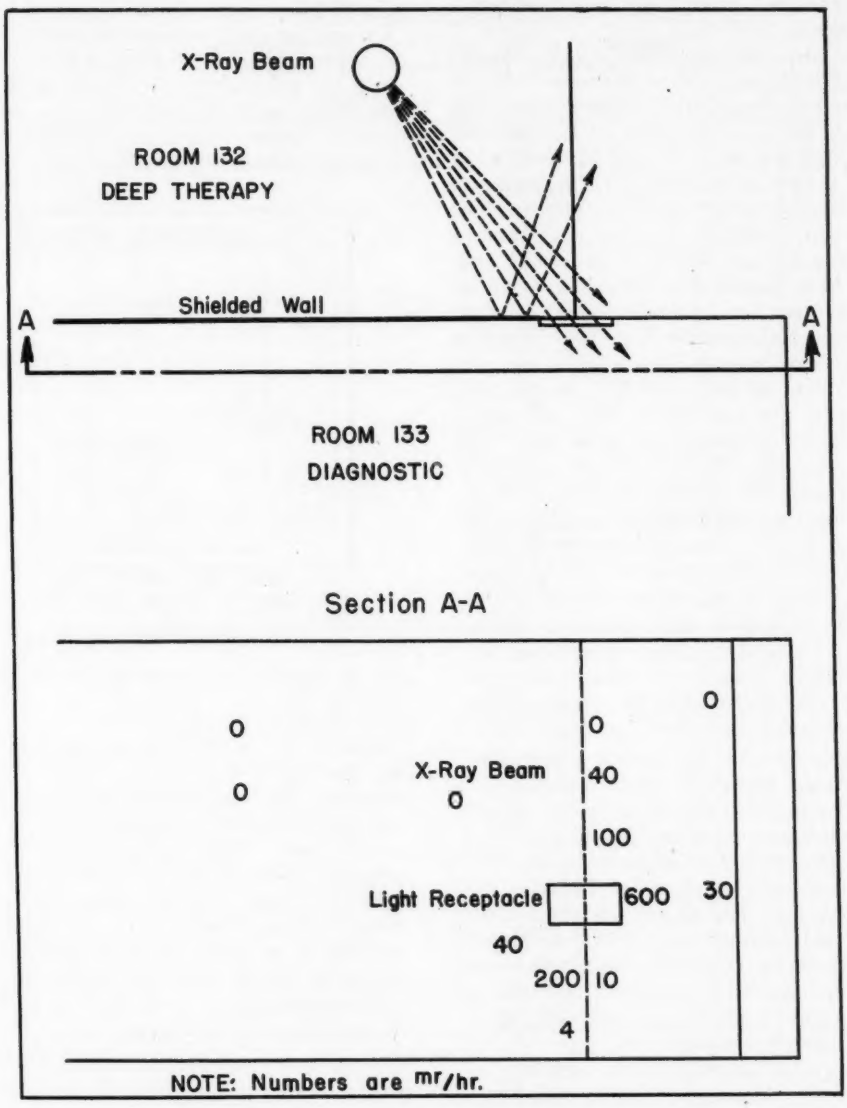

Fig. 4. Leakage of x-ray through unshielded exterior walls.

mum current rating of the machine should be used, although surveys of several hospitals have shown that the maximum current usage for radiographic purposes was equivalent to about one-third milliampere continuously.[18] This is of importance since the maximum current rating of a therapeutic machine is normally less than that of a diagnostic unit.

fessional man regardless of specific interests can be in complete control of the first three categories. The last group is essentially out of the control of the professional man, and therefore he must be doubly cautious.

Taylor[9] has summarized the magnitudes of exposure for the physician under normal conditions (table 1). It must be noted that the fluoroscopic examination gives the highest body dose and therefore can also be expected to give the highest gonad

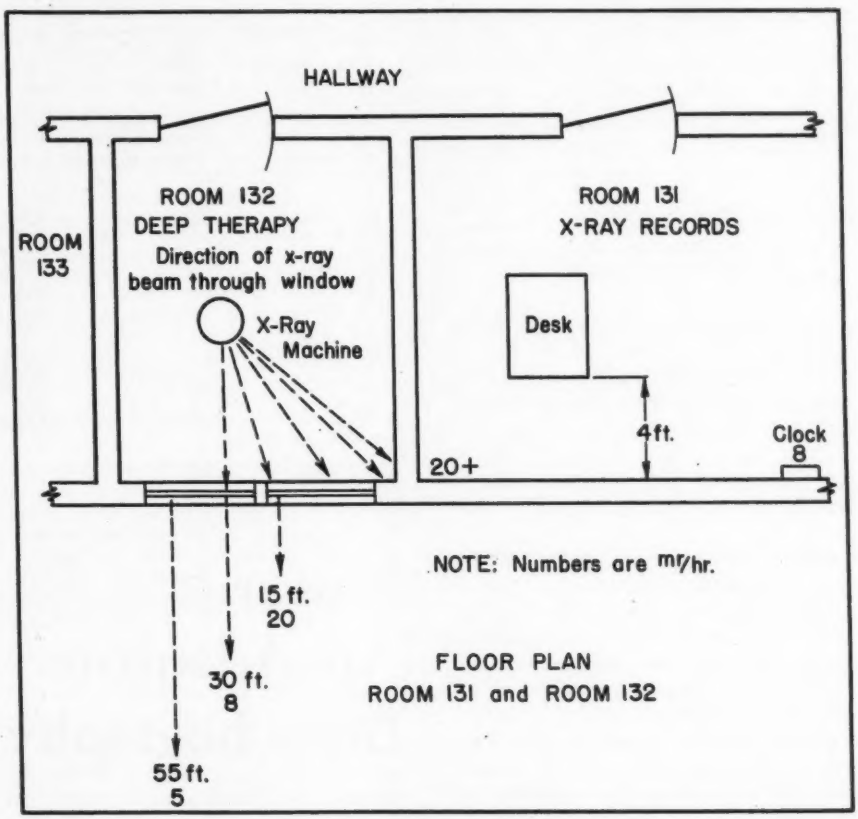

Fig. 5. Radiation through unshielded exterior walls.

EXPOSURE AND PROTECTION

There are four major groups of people who must be considered in radiation protection: (1) the physician, research scientist, and any other professionally responsible person in charge; (2) technicians and office staff members who more frequently actually operate the x-ray units or handle the radioactive isotopes; (3) persons more specifically limited to the medical profession, including the patient; and (4) the people who inadvertently are exposed to ionizing radiation, that is, the neighbors or persons outside the office confines or in the case of industrial operations, those working in the immediate vicinity. The prodose. An individual's lifetime exposure of the gonads, on the average, may be as low as 20 r. Furthermore, if a physician in the course of a fluoroscopic examination subjects a patient to a dose of 60 r, the unprotected physician at 1 meter would receive 0.6 r or double the weekly permissible dose. The general practitioner usually will have technicians or personnel untrained in the many little facets of protection that make for personnel safety. For example, a nurse or visitor standing a yard away from the patient during a fluoroscopic examination may be expected to receive 1 per cent of the patient dose. Another important point is that the permissible exposure for persons not employed in a medical establishment is

only 0.1 that for the employees, except that such exposure may be averaged over 12 months.

In making actual measurements or computations the physician, research scientist, or designing engineer should use safety factors freely. The beam should always be assumed to be pointing in the most disadvantageous direction. The occupancy of the outside space should be estimated on the high side. It should be assumed that the adjoining space will be occupied 100 per cent of the time.

TABLE 1.—*Ionizing Radiation Experienced by the Physician Under Normal Conditions.*

Type of Examination	Average Dose (r)	Gonad Dose (%)	Percentage of Examinations
General radiographic	2.7	0.1 - 10	52
Fluoroscopic (G.I.)	65	25 - 75	15
Photofluorographic	1	1	33
Extremities radiographic	2	0.1	10
Chest radiographic	0.1	1.0	37
Trunk radiographic	5	25 - 75	30
Pregnancy radiographic	20	25 - 75	1

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CONCLUSIONS

Radiation protection is becoming an increasingly important part of any health program.

For the present at least, the major radiation problems still exist around x-ray and radium units, although radiation from radioactive sources is being developed in quantity, variety, and distribution in magnitude never before visualized.

In the truest sense of public health the solution to x-ray and radium protection is an aggressive educational program. This educational effort can best be supplemented by the use of only competent scientists, physicians, and engineers who have the required technical background.

The consulting engineer should design the facilities and shields with an aim to see how low a practical operating level can be achieved—not how high a level can be used without transgressing the permissible limits. The upper limits set by radiation safety experts usually have been determined from a limited number of clinical and biological data to which were applied a series of calculated estimates.

Another way of controlling ionizing radiation is through the radiologist, practicing physician, scientist, and technician. No changes in equipment or equipment location should be contemplated without first checking the previous design data. Operational techniques should be well planned.

Installations in use with questionable shielding facilities or where operational techniques might be improved should be checked by qualified engineers or physicists.

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♦ Dr. Gloyna, Department of Sanitary Engineering, University of Texas, Austin.

Dr. Rude, Brackenridge Hospital, Austin.

Towards An Adequate Bronchography

OTTO H. GRUNOW, M. D., and R. P. O'BANNON, M. D.

Fort Worth, Texas

STATISTICALLY thinking, one would suppose that a common procedure such as bronchography by now would have been so well explored that little more of interest could be uncovered. Such is the nature of medicine, however, that the variables of random experience, socioeconomic factors, improved means of diagnosis, and surgical and therapeutic advances may so alter an accepted pattern of disease that it may be almost unrecognizable. What is taken for fact must be continuously restudied and evaluated in the light of newer concepts and discoveries so

that we may have the best and most useful available for our patients.

Bronchography, as we know it, probably began in 1922. Prior to this time, attempts had been made to outline the bronchial tree with opaque powders and other media, but the attempts failed because of their irritating qualities. Lipiodol, an iodinated poppy seed oil, was introduced in an indirect manner. Lafay proposed it as an antisyphilitic drug in 1901. Four years later Martin described its therapeutic value in respiratory diseases, but Rist discovered its radiopaque properties. Seventeen years later Sicard and Forestier introduced it as a bronchographic medium and demonstrated the procedure which basically is still followed today. This was nicely summarized by Schmidt.[14]

Dr. Otto H. Grunow and his co-author presented this paper for the Section on Radiology at the 1956 Annual Session of the Texas Medical Association, April 23 in Galveston.

Since the patient is entitled to the fullest utilization of any diagnostic procedure to which he is asked to submit, this paper emphasizes and elaborates upon the more critical aspects of normal anatomy and physiology, the old and newer absorbable contrast media, and a review of technique for the filling and recording of all bronchial segments.

Although a great advance had been made, drawbacks soon became evident. The first of these was a tendency for this and similar oils such as Iodochlorol (iodinated peanut oil) to fill the alveoli, where it would remain, apparently unaltered, for months and even years, effectively obscuring the area from further observation or study. Why certain areas are prone to over-filling is not clear. Explanations based on coughing or low viscosity produced by heating have been unsatisfactory since the cough assisted by ciliary activity is a highly efficient expulsive force in the normal bronchus, and the oil quickly attains the temperature of its surroundings when it reaches the finer structures. In the alveoli it can be eliminated only by phagocytosis or released for absorption by the slow lipase activity of the lung. Its presence is disturbing in surgery, which is usually postponed for several weeks until the cut surface of the lung no longer presents an oil oozing surface. Its presence disturbs the body iodine balance for many months and probably years while the iodine is slowly being released. An opaque medium which is rapidly eliminated from the lung is then our first interest.

The introduction of oily media into mucus lined cavities has always seemed objectionable on theoretical grounds. The oil and water interface gives rise to expected surface tension phenomena, such as disturbed capillary effect, droplet formation, and separation into layers. Practically, one expects an erratic spreading of the media over the mucosa, incomplete filling of many fine structures including narrow tracts into abscesses and cavities, and immiscibility of the oil with the secretions in cavities. Although a study of the usual good bronchograms fails to bear out many of these contentions, we think that the development of a suitable water miscible contrast medium represents our second interest.

A solution to the elimination problem came from an unexpected source. In 1945, while attempting to enhance the therapeutic value of Lipiodol by adding sulfanilamide, Dormer, Friedlander, and Wiles[1] discovered that the opaque portion of the medium, at least, was eliminated within one to three hours. No scientific explanation has been given, but the thickened mixture may be unable to flow into the alveoli or, perhaps, the lipase activity of the lung might be spurred or improved by the sulfanilamide. During the past ten years the mixture has gained a fair number of proponents. Salinger and Houghton[12] reported its use in 7,000 cases over a ten year period. They were impressed by its advantages and lack of patient reactions. However, Elphinstone, Iles, and Laidlaw[2] reported that the 2 patients they studied developed methemoglobinemia. The preparation is made by grinding 8 Gm., more or less, of sulfanilamide or sulfadiazine with 20 cc. of Lipiodol in a mortar under sterile conditions. This chore has probably hindered its acceptance in the United States. Were it not for the development of another contrast medium and a desire to supplant an oily with a water soluble medium the mixture probably would have become much more popular. The Fougera Company recently released a Lipiodol-sulfanilamide suspension which we have found too viscous and troublesome to use in its present form.

Diodrast was used in bronchography in 1935 according to Taylor and Bobrowitz.[17] Morales and Heiwinkel[9] announced the use of Umbradil viscous B in 1948, and shortly thereafter Fischer[3] described a similar substance, Joduron B. This was followed by reports on other similar substances such as Viskiosol, Perabrodil M viscous, Jodosorb and in this country Methocel-Diodrast.[13] All appear to have the same contrast medium, namely, iodopyracet (Diodrast).

The opaque component is rapidly absorbed and excreted through the kidneys. The thickening agent which is radiolucent carboxymethylcellulose remains for a much longer time, according to Hellström[5] and others. Tests conducted on rabbits and rats indicated to him that the carboxymethylcellulose of Umbradil viscous B could remain for long periods in the lung

without a foreign body reaction. Joduron B (Cilag) caused local severe and irreversible changes in the lung which were characterized by induration and a chronic inflammatory process about the deposited thickening agent. Subsequent authors insist that no reactions occur. It appears to us that we are substituting a radiolucent foreign body for an oily one.

All of the water soluble media are more irritating to the bronchial mucosa than the oil and require almost perfect anesthesia if coughing is to be avoided. Cause of the undesirable trait may be the relative hypertonicity of the solution, the inherent irritability, though low, of the Diodrast, and possibly an irritative effect of the carboxymethylcellulose.

Lenzi[8] used the rate of absorption of water soluble media as an indication of the integrity of the lung and called it "functional bronchography." Rapid rates are seen in acute inflammatory states whereas delayed rates are seen in chronic processes such as bronchiectasis. He recognized a bronchial, alveolar, and lymphatic-venous phase of disappearance.

A new medium which differs from the others in that it consists of a suspension of the relatively insoluble pulverized crystals of the normal propyl ester of 3,5-diiodo, 4-pyridone, N-acetic acid or the acid base of Diodrast, became available in 1952.* Being insoluble, the medium avoids the irritative character of a hypertonic solution. When it is suspended in water, the hydrogen ion concentration and tonicity are easily controlled. The viscosity is increased by sodium-carboxymethylcellulose. This medium still requires a better anesthetic than does the oily vehicle.

The suspension in peanut oil has properties similar to other oily media. There is practically no taste. The material is well tolerated and requires a minimum of anesthesia. According to the Glaxo Laboratories, the thickening agent, the opaque base, and the oil are eliminated within five days. One point in disfavor is being noticed, namely, that up to 20 per cent of the patients have experienced fever and malaise 24 to 48 hours after bronchography. The reaction subsides rapidly without therapy.[18]

BASIC MAP OF BRONCHIAL TREE

We fully appreciate the arguments by our colleagues in chest specialties who fill only suspected segments during bronchography, but, except for the isolated case, we believe this is not an ideal examination. The incomplete bronchogram is nothing but pure frustration to the physician who must make a diagnosis. We think that at least two reasons would motivate the examiner to a complete examination. The patient should receive full value since he has been subjected to the discomfort as well as the risks inherent in the procedure, and the consulting surgeon should have a complete map of the bronchial tree available for study.

About 15 years ago Dr. Ralph Matson remarked that he knew of 45 different nomenclatures of the bronchopulmonary segments but that none of them was acceptable. The pressure of improving chest surgery required that the basic architecture of the tree be discovered and appropriately named. This has been accomplished now and an international committee in London officially accepted the present nomenclature in July, 1949. Lists and related illustrations have appeared in numerous journals and bear intensive study by radiologists. The only fault we find with most of them is the lack of illustrations of the segments in the oblique views.

Two related anatomic areas need emphasis. The first is the long bronchus extending downward beyond the right upper lobe branch which is called the intermediate bronchus. Its first branch would supply the right middle lobe. In the immediate neighborhood is the bronchus to the apical division of the lower lobe. This is an important area and can be easily overlooked or confused. On the left side it is the lingular division of the upper lobe bronchus which requires emphasis. Both areas are prone to bronchiectasis and both can be used as base marks for further identification of the branches of the bronchial tree. Without a clear picture of the normal anatomy, changes such as kinking, incomplete filling, distortion, displacement, condensation, ectopia, or absent segments cannot be detected.

DYNAMIC ACTIVITY OF BRONCHUS

Our attention was drawn to the physiology of the bronchial tree by one film of a stereoscopic pair which happened to be taken during a cough. Although we anticipated a narrowing, we were surprised to see a degree of contraction to two-thirds of the normal. On other films we had noted an apparent motion of only a portion of the bronchial tree although the area was not in contact with the heart and the adjacent branches were quiet. For an explanation of the phenomenon we were drawn to a persuasive discussion by di Rienzo,[10, 11] who clearly demonstrated that in the act of coughing a bronchus seems to brace and straighten itself before a peristaltic wave arises in the periphery and explosively migrates through the branches to the glottic chink. This activity can be and frequently is limited to the irritated segment. The respiratory muscles act only to steady

*Dionosil, Glaxo Laboratories, Ltd., propyliodone.

the thoracic cage. A liter of air can be expelled in this manner without producing visible changes in the contents of the esophagus, the neck veins, the size of the heart, or the great vessels. A patient can cough with the chest opened just as he can vomit with the abdomen opened.

Since the bronchus is a dynamic organ, one can understand how a bronchiectatic cavity with diseased and destroyed walls fails to empty itself. The cavity and its contents are jostled about during the cough by the motion of the adjacent lung but fail to produce an expulsive movement.

It is commonly stated that the act of coughing will endanger the production of a good bronchogram and that the opaque medium would then tend to fill the alveoli. On the other hand, some of our best bronchograms were produced in patients with poorly controlled cough. There is one exception, namely, that in the case of Dionosil it is possible that the entire quantity of opaque media can be wiped cleanly out of one side by a cough.

When one considers the viscosity of the medium, one is surprised that the material passes through the finer bronchi at all. Lipiodol, when placed in a capillary of bronchiolar size, whether warmed or not, refuses to migrate through the tube. The bronchus apparently aids in the migration. During fluoroscopy one can see how the medium is drawn in by the inspiratory phase, scattered and broken up on the expiratory phase, only to be drawn deeper on the next inspiratory phase.

BRONCHIAL DIVERTICULA

On one bronchogram we discovered a large number of little sacs or diverticula scattered in a sort of fringe along the main bronchi. The American literature does not mention this finding, but several references were noted in the Continental literature. They were first described by Stutz in 1948 and Stiller[15] in 1949, according to Gudbjerg and Gregers Thomsen and others.[4, 8] It is claimed that they are the result of chronic bronchitis or chronic cough and consist of an ectasia of the mucous glands similar to the changes seen in infected para-urethral glands. It is possible that they were not seen before because of the limits of radiography or a slight bit of motion. Fischer has claimed that their visibility is dependent upon water soluble media, although the remaining authors had been using oily media. One wonders whether the diverticulosis also may be due to loss of tone with aging such as is demonstrated by the appearance of a hiatus hernia or diverticulosis of the gastrointestinal tract.

PATIENT

With this background we may turn our attention to the patient. Bronchography is not an entirely innocuous procedure and should not be performed simply to demonstrate a known condition. A judicious choice of patient is essential. Common reasons for carrying out the procedure in order of importance are (1) chronic suppurative disease, (2) recurrent pneumonia, (3) atelectasis, (4) mural growth, (5) pulmonary neoplasm, and (6) bronchial obstruction. The latter is difficult to prove decisively since it requires ideal filling.

The examination should be withheld from the very old patients, the severely emphysematous and dyspneic, the toxic, those who have had a recent hemorrhage, those who have open active tuberculosis, or those who are sensitive to the anesthetic or opaque media. Zavod[20] has shown that the average loss of vital capacity following bronchography was 15 per cent. His reports are well worth studying.

Since the procedure may be distressing and produce much apprehension, preparation of the patient begins early by explaining in some detail the procedure, its purpose, and the feelings one might experience. The doctor will need his cooperation, and he will need the doctor's assurance. Postural drainage may be needed prior to the examination. Food is withheld and a barbiturate such as Nembutal (0.1 or 0.2 Gm.) is given from two to three hours prior to the procedure. Two reasons are offered: the first is to sedate the patient and the second to provide a prophylaxis against a cocaine derivative reaction. To decrease the cough reflex codeine (0.06 Gm.) is given hypodermically 30 minutes prior to the examination. Codeine is withheld in the asthmatic, and Adrenalin, 1:1,000 or 1:10,000, is given instead.

As would be expected, there are many methods to introduce the opaque media. Fundamentally they are all derivatives of several basic methods. The use of a needle through the cricothyroid membrane, the dripping over the back of the tongue or through the nose, the introduction of a Métras' catheter or similar tube into the suspected bronchus, the use of bronchoscopy with instillation under direct vision, inhalation of an aerosol, and finally the introduction of a catheter into the trachea are those commonly mentioned.

The needle and the instillation over the back of the tongue in ideal patients need no mucosal anesthesia if an oily medium is used. The others require varying degrees of anesthesia depending upon the routine of the examiner and the type of medium. All water soluble media require an excellent complete anesthesia if good films are expected. The oily media require much less anesthetic and then only because an instrument is to be placed in the trachea.

ANESTHETIC

The most commonly used anesthetic is Pontocaine Hydrochloride or Pantocain (tetracaine) which is freshly made in a 1 per cent or 2 per cent solution prior to the examination. According to the manufacturer, the total dose should not exceed 20 mg., but all authors imply that they use doses from 40 to 300 mg. Stutz[16] of the Freiburg University collected 44 cases of serious reactions to the drug which had been used on other mucous membranes besides the bronchial mucosa. Aside from this article there are few references to a fatal outcome. Cocaine is preferred by some who use a solution of 2 to 4 per cent.

Keil and Vieten[7] and Worth and Heinz[19] studied mucosal anesthetics extensively and believed that the addition of Adrenalin as recommended by some is contraindicated because it decreases the degree of anesthesia and increases its toxicity. They also recommended another agent called Rhenocain or Salicain (para normal butylaminosalicylic acid-dimethyl aminoethylester hydrochloride) which was found to be 10 times stronger than cocaine, and similar in its action and one-third as toxic as Pantocain.

The anesthetic has been applied in numerous ways from spraying to swabbing and even to nebulization as described by Miller, Dinhoffer, and Conyers.

A reaction to Pantocain is manifested by a fall in blood pressure, bradycardia, pallor, sweating, apprehension, tremor, dyspnea, mild cyanosis, dilated pupils, and grand mal type convulsions. A 2.5 per cent solution of Sodium Amytal or Pentothal Sodium always should be available for intravenous injection to counteract the reaction. One to 6 ml. should be injected slowly. Positive pressure oxygen also should be available. Supervision of the patient should continue for several hours after the episode.

The opaque media may rarely produce a reaction. A history of sensitivity to drugs, allergies, asthmatic attacks, and the like should encourage one to delve deeper into the patient's idiosyncrasies. If necessary the patient may require testing with iodine (potassium iodide by mouth) or with the basic principle in the water soluble media, namely, Diodrast, by the injection of a small quantity of the latter into the blood stream. Most other tests are not reliable. The oily substance may rarely produce a granuloma, but for the most part the highly refined vegetable oils are innocuous and well tolerated, probably because of their low free fatty acid content.

METHOD OF BRONCHOGRAPHY

Our method is similar to many others and is mentioned only for the sake of completeness. Two and one-half ml. of freshly prepared 1 per cent Pontocaine is squirted through a nasal catheter of which the tip lies in the upper oropharynx while the patient is inhaling through the mouth. He is requested not to swallow the excess. This is repeated after a five minute interval. Anesthesia is indicated by inability to swallow or to speak easily. Under fluoroscopic control the catheter is advanced into the trachea so that the tip lies in the neighborhood of the aortic arch. The patient is placed on the radiographic table reclining on his elbow with the first side to be filled dependent (usually the right side), and 20 ml. of an oily opaque medium is instilled. He drops to his shoulder in a semisupine position, and the table is tilted so that his head and body are tilted 45 or more degrees downward. This position is retained for about one minute, after which he is brought to the horizontal and placed in the semi-prone position. He is again tilted downward for about one minute. He is brought to the cassette changer, and postero-anterior erect and right lateral views are taken. He is returned to the table and with the opposite side dependent 20 additional milliliters of opaque medium are instilled. He is again tilted twice in comparable positions. At the cassette changer stereoscopic postero-anterior and both posterior oblique roentgenograms are made. The films are processed and viewed to determine whether additional views, delayed views, or additional filling might be desirable. Thereafter the patient is encouraged by position and coughing to expel the medium. We have not found fluoroscopy to be helpful.

In this manner we have been consistently able to outline all of the major bronchial segments as well as many of their secondary and tertiary branches and to present them in a number of positions so that their continuity and disposition can be adequately evaluated.

CONCLUSIONS

In conclusion we would like to stress these points:

(1) The distressing retention of oily opaque media can be avoided by using a water soluble medium, a suspension of propyliodone, or a mixture of sulfanilamide and the oily medium of choice.

(2) It is necessary that the examiner be well acquainted with the normal topography of the bronchial tree and that a complete examination of both lungs be performed so that the patient may receive the full value of his examination.

(3) The healthy bronchus is not a passive tube but enters dynamically into respiratory activity and coughing.

(4) The patient's interest must be fully protected by using judgment in the choice of the patient, in the choice and method of anesthetization, in the pro-

tection from undue reactions, and by the assurance that an adequate examination will be performed.

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♦ Dr. Grunow and Dr. O'Bannon, 650 Fifth Avenue, Fort Worth 3.

Cancer Cytology Conference

The First Pan American Cancer Cytology Congress will be held April 25-29 in Miami Beach, Fla. This congress is designed to interest researchers, medical practitioners, specialists, public health workers, and educators. Latest advances in cancer detection, microbiology, radioisotopes, electron microscopy, and biology of cancer will be presented. In addition to the scientific program, there will be organized entertainment for physicians and their wives. Information may be obtained from the corresponding secretary, Elizabeth Maselli, P. O. Box 633, Coral Gables, Fla.

Medical Management of Renal Disease In Infants And Children

JOHN L. BASKIN, M. D.

Dallas, Texas

THE MEDICAL management of renal disease in infants and children has been modified in recent years. Knowledge of these modifications and their impact on the course and prognosis of renal disease is of concern to all of us with responsibility for such patients. The purpose of this paper is to outline recent advances in the therapy of acute nephritis and the nephrotic syndrome illustrating these from my experience in Dallas.

Dr. John L. Baskin presented this paper for the Section on Pediatrics at the Texas Medical Association Annual Session in Galveston, April 23, 1956.

Management of acute nephritis and the nephrotic syndrome in infants and children has been modified by therapeutic advances, including the use of steroids in the nephrotic syndrome to alter clinical and laboratory deviations toward normal. Nevertheless, the prognosis is likely to be poor when hematuria, hypertension, or nitrogen retention persist.

ACUTE GLOMERULONEPHRITIS

The definition of acute glomerulonephritis that is used here is essentially that of Barness and others:[1] an acute renal disease with abrupt onset usually following a pyogenic infection, especially the group A type 12 Streptococcus, and characterized by gross or microscopic hematuria alone, or with hypertension, azotemia, or proteinuria present for a short period of

time and then gradually subsiding or, infrequently, progressing into chronic glomerulonephritis. More severe symptoms and signs relative to the cardiovascular system and central nervous system such as headache, nose bleed, confusion, convulsions, shortness of breath, dependent edema, or marked oliguria also may occur during the critical first seven to ten day period. It is during this danger period that close observation, preferably in a hospital, should be maintained to avert the mortality resulting from complicating hypertensive encephalopathy, congestive heart failure, or acute renal failure.

A "no-added" salt diet is used if hypertension is present and daily weights are recorded to follow the development or the progress of edema. There is evidence that penicillin is an effective drug to give the first week to eradicate Streptococci from the throat. Criteria for antitensive drug use must be individualized, but an elevation of the blood pressure above 140/90 mm. of mercury is cause for concern, and the appearance of such symptoms and signs as intense headache, mental confusion, unresponsiveness, convulsions, shortness of breath, and marked oliguria is a definite indication for treatment. Magnesium sulfate, reserpine, hydralazine, and protoveratrine are antitensive drugs that have been used in these circumstances. My experience has been limited to the use of magnesium sulfate and reserpine. Magnesium sulfate is used as a 1 to 2 per cent intravenous solution with the amount not to exceed 0.1 to 0.2 Gm. per kilogram of body weight.[8] This drug must be administered with great caution, the infusion flowing at a rate not exceeding 2 cc. of the 2 per cent solution per minute. The patient should be kept under constant observation by trained personnel, and the blood pressure recorded at intervals of five minutes. As the blood pressure decreases, the infusion is slowed, and it is stopped if the blood pressure returns to 120/80. Treatment may have to be repeated in six to eight hours. A few cases show little response. Calcium gluconate must always be present at the patient's bedside in a syringe and ready for immediate administration if signs of magnesium intoxication, such as unresponsiveness, convulsions, loss of deep tendon reflexes, or respiratory failure, should occur. Intramuscular administration is considered less effective, irritating and more hazardous than intravenous administration. Oral magnesium sulfate is believed to be of little value. At present I am using reserpine in doses of .07 mg. per kilogram of body weight given intramuscularly and repeated at intervals of six to eight hours, if needed. Though my experience with this drug has been limited, it has been effective with no significant toxic effects in this dosage.

Daeschner and others,[3] with extensive use, have found that parenteral reserpine in larger doses of 0.100 to 0.150 mg. per kilogram of body weight produced a favorable response in 85 per cent of cases with a fall in the mean blood pressure of 20 mm. of mercury or more. When reserpine alone is not effective Ettledorf[4] has suggested using reserpine. 0.07 mg. per kilogram of body weight, and hydralazine, 0.1 to 0.15 mg. per kilogram of body weight, in combination intramuscularly. In 7 instances a single dose of this combination resulted in sustained normotension while in 6 additional patients the normotensive response lasted from 10 to 72 hours.

In those patients who develop congestive heart failure with shortness of breath, pulmonary edema, and electrocardiographic evidence of left heart strain, immediate digitalization is indicated with 0.03 mg. of digitoxin per kilogram of body weight being given in divided doses the first 24 hours orally or parenterally. A maintenance dose of one-tenth the digitalizing dose is given daily. The patient is kept at complete bed rest and oxygen therapy may be necessary. Response to digitalization is usually good and may be dramatic.

When renal failure with marked oliguria from 25 to 75 cc. daily is present, the treatment is to avoid accumulation of excess body water by replacing only the insensible water loss, to replace electrolytes in order to maintain normal serum electrolyte pattern, to spare protein catabolism with increased caloric intake derived chiefly from carbohydrate, and to avoid protein and potassium containing foods. This conservative management is usually adequate to avoid serious consequences should the oliguria last only a few days. Close check on serum potassium levels and serial electrocardiograms may help to predict potassium intoxication. One practical treatment to correct potassium intoxication is by stimulating the deposition of potassium with carbohydrate in the tissues by giving intravenous glucose containing 10 units of regular insulin per liter. If the oliguria persists and the electrolyte pattern becomes disturbed, especially with evidence of potassium toxicity, more heroic measures such as intestinal lavage, peritoneal irrigation, or the "artificial kidney" may become necessary. When diuresis occurs, careful attention still must be given to serum electrolytes to recognize and correct disturbances from disproportional conservation of water and electrolyte by the tubules. The rate of return of kidney function in a child recovering from acute renal failure is best indicated by serial determinations of the urea clearance and of the maximum concentrating ability.[2] The return of kidney function in those patients who survive is practically always complete, though the nephrotic syndrome may rarely follow. Sometimes a history of vomiting and marked oliguria make one suspect water deprivation. A urine specific gravity of 1.015 or less and absence of thirst characterize renal failure, while urine specific gravity of 1.015 or more and presence of thirst

indicate water deprivation. The duration of hypertension in acute glomerulonephritis is usually brief, and once the blood pressure has been lowered for four to eight days this danger is past.

After the hypertensive phase is concluded or after one week's observation in the hospital without elevated blood pressure, the child is ready to be sent home. During his hospital stay, throat cultures should be obtained on all members of his family to determine if a nephritogenic Streptococcus is harbored by one of them so treatment may be given to eliminate the threat of exposure or reexposure to a carrier upon his return home. Once at home he is kept at bed rest with bathroom privileges for six weeks, then allowed increasing activity for one month and then allowed full activity or to return to school. In following the patient's progress, Barnett[8] has found the urea clearance test the most effective method to separate those cases destined to heal rapidly from the few who continue on to chronic glomerulonephritis. A benign course should be indicated by a urea clearance returning toward normal in two to three weeks and reaching normal within six weeks. Addis counts, also of value in following the course of the disease, rarely return to normal before six months.

NEPHROTIC SYNDROME

The nephrotic syndrome is characterized by edema, proteinuria, hyperlipemia, and hypoproteinemia and usually begins insidiously between the ages of 18 months and 4 years.

The steroid hormones appear to be the most effective agents now available for treatment of the nephrotic syndrome. Diuresis can be induced in about 3 out of 4 patients by giving 150 to 200 units of ACTH per meter[8] of body surface area in divided doses daily over a ten day period in either the first or second courses of treatment. Initially the steroids were used in this manner in a single course as a diuretic agent without appreciable influence on the course of the disease. More recently the hormones have been used in a variety of ways as maintenance therapy in an effort to stop or slow the progression of the renal lesion in hope of effecting a cure or an arrest of the clinical condition. Danowski and others[8] have used infusions of dextran to induce diuresis, then ACTH intramuscularly, 25 units every six hours for 28 days. Merrill[8] has used ACTH continuously over a six month period with a gradually decreasing dosage schedule. Lange and others[8] have used ACTH intramuscularly, 100 units per day for seven days in children and 160 to 200 units per day for seven to ten days in adults. The dosage was then gradually reduced over a three day period, and after a five day rest, oral cortisone in high dosage, 400 mg. daily, was started on the same three successive days of each week. No one of these regimens has demonstrated a clear-cut superiority over another. Each regimen also included antibiotic and potassium salt therapy in addition to other supportive measures.

RECENT CLINICAL EXPERIENCES

My experience with steroids includes 18 cases of nephrotic syndrome, with edema as an outstanding symptom, treated from January, 1953, to February, 1956, at Texas Children's Hospital, Dallas.

The initial hormone therapy was usually ACTH, 50 to 100 units intramuscularly daily for 7 to 14 days, though cortisone and prednisone were used on one occasion each. In 12 of the earlier cases this regimen alone was followed in an effort to induce diuresis, while in the 6 remaining cases cortisone, hydrocortisone, or prednisone was given as intermittent maintenance therapy in doses of 10 to 150 mg. per day, usually on the same three consecutive days each week. Therapy has been continued for from six weeks to six months, though 1 patient who is being followed at the present has been maintained on oral hydrocortisone for about one year. In general, those patients who have been treated more recently have been kept on maintenance steroid therapy for longer periods.

To evaluate the effectiveness of steroid hormone therapy in nephrotic syndrome it was decided to record the changes brought about by treatment on the characteristic clinical and laboratory findings.

Diuresis occurred in 15 of the 18 edematous patients one or more times in response to hormonal therapy. Diuresis began from 4 to 15 days after treatment was started and varied in magnitude from 2 pounds to 28¼ pounds of weight loss. Of these 15 responsive patients, 3 eventually failed to respond with diuresis to subsequent therapy.

Proteinuria was reduced in 17 patients after treatment, and 7 of these had protein free urines after the initial short term therapy of 7 to 14 days.

Serum proteins were initially reduced below 5 Gm. per 100 cc. in 13 of the 16 patients who had these determinations. Only 3 of these patients had serum protein determinations done after maintenance therapy was in progress, and each showed an increase of 1.5 to 2.0 Gm. per 100 cc. with a marked increase in serum albumin and slight decrease in serum globulin.

Serum cholesterol determinations were done prior to treatment in 14 patients. In all of these the levels were elevated above 300 mg. per 100 cc. In 9 instances additional serum cholesterol determinations were carried out during or after maintenance therapy. Eight of the 9 levels were significantly reduced, to

normal in 3 instances, while there was a slight increase in 1 case.

One of these 18 patients died. She collapsed suddenly while being treated with ACTH and failed to respond to emergency shock-combating measures. A similar episode had occurred one week previously, but the patient had responded to transfusion and other measures and ACTH had been discontinued for two days. Necropsy revealed subacute and chronic proliferative glomerulonephritis. It is difficult to eliminate ACTH as a contributing factor in this death.

In this study the measured clinical and laboratory deviations characteristic of nephrotic syndrome were altered toward or to normal in a large majority of instances after steroid hormones were administered.

DURATION OF THERAPY

With accumulating experience in therapy criteria for continuation of treatment or for initiating retreatment are emerging. Riley[9] has found that a sedimentation rate which falls to normal with treatment is evidence of adequacy of treatment and expressed the belief that a rising sedimentation rate in an inactive case is indication for retreatment. Payne[6] used plasma paper electrophoresis as a criterion for stopping therapy and did so when the pattern returned to normal. For patients who make no response to the initial effort at treatment, he believed a rest period should be permitted and then retreatment instituted. Rapoport[7] found proteinuria usually disappeared between the twelfth and eighteenth day of treatment and believed that persistence of proteinuria beyond the eighteenth day of treatment was indication for a regimen of maintenance therapy whereas if a complete remission occurred after 18 days of treatment or less, the patient should be observed and retreated only if proteinuria reappeared.

PROGNOSIS

Heymann[5] has observed that the albumin-globulin ratio in the urine of nephrotic children whose disease took a favorable course was 2.25:1 and that not more than 2.0 Gm. of globulin was excreted per day. In those instances in which the disease progressed to renal failure the ratio was close to 1.0:1 and the globulin excreted in 24 hours ranged from 2.0 to 3.25 Gm.

Evidence presented at the 1954 American Academy of Pediatrics Round Table on Renal Disease indicated that the prognosis of nephrotic syndrome might be worse if hematuria, hypertension, or nitrogen retention were present even for a short period of time. Barness, Moll, and Janeway[1] in a long term study of 208 cases with nephrotic syndrome found hypertension and/or azotemia which persisted for longer than one month grave prognostic signs. They also noted that persistent or recurrent hematuria frequently was associated with unfavorable clinical course. In my series prolonged hypertension was present in only 1 case, and the clinical course has been that of slowly progressive renal failure. Azotemia as evidenced by blood urea nitrogen determinations above 30 mg. per 100 cc. when the patients were adequately hydrated was found persisting longer than one month in 3 patients. One of these patients died, and necropsy revealed subacute and chronic proliferative nephritis; the remaining 2 show courses consistent with chronic nephritis. Although persistence of hypertension and/or azotemia beyond one month is not definite indication of poor prognosis, it is cause for caution in prognosis. In general, the longer the duration of these signs the more guarded the prediction of outcome.

SUMMARY

Some recent modifications of the medical management of renal disease in infants and children are enumerated.

Acute glomerulonephritis is defined, and present widely accepted principles applied in handling these cases are outlined.

Clinical and laboratory criteria for diagnosis of nephrotic syndrome are presented. Regimens using ACTH and cortisone continuously or intermittently either alone or in combination are described.

Clinical experience with nephrotic syndrome at the Children's Medical Center in Dallas from January, 1953, through February, 1956, is summarized.

Criteria for duration of therapy and some considerations of prognosis are presented.

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Dr. Baskin, 8215 Westchester Drive, Dallas 25.

Dermatologic Problems In Industry

Diagnosis and Prevention

EDMUND N. WALSH, M. D.

Fort Worth, Texas

IN THE PAST 50 years the industrial and technical developments in our country and the world have progressed at a rapidly accelerating rate. A few of the industrial giants that have developed in the past few decades are the petroleum and allied chemical industries, the automobile and aircraft industries, and those utilizing plastics, resins and synthetic rubber, biologicals, metals, and electronics. Last and probably the most important of all is the field of atomic energy and radioactive chemistry with its limitless possibilities.

Each of these industries constantly is developing new problems in industrial health as new chemicals and processes are introduced. Some of the dermatologic hazards involve not only the workers employed in the manufacture of the products but the consumer as well.

Table 1, with figures from the census,[5] shows to what extent ours has become an industrial economy and the consequent growth of industrial medicine.

Not many years ago, industrial practice was considered "bread and butter" work reluctantly taken by a young doctor until he could establish a more lucrative private practice. Today industrial medicine is a specialty field of its own demanding knowledge in many areas including labor-management relationships and law as well as medicine. Unfortunately this development resulted from the demands of industry and labor rather than from the initiative of the medical profession.

Dr. Edmund N. Walsh, a Fort Worth dermatologist, presented this paper before the Section on General Practice, Texas Medical Association Annual Session, Galveston, April 24, 1956.

Industrial dermatology is a growing specialty. Multiple factors may cause industrial dermatoses, but chemical irritants are the chief offenders. In diagnosis, patch tests are valuable. Treatment is not unique, but much can be done in prevention by cooperation among management, labor, and physician.

Industrial or occupational dermatology as a specialized field within a specialty has developed gradually. Syphilis and gonorrhea might be considered occupational hazards of the "oldest profession" and the first of these is in the field of the dermatologists. In 1775, Percivall Pott described scrotal cancer of chimney sweeps as one of the first conditions recognized as an occupational disease. Since then at an ever increasing rate which parallels our industrial growth, there have appeared reports of dermatitis, cutaneous infection, and malignancy caused by or related to various industrial or occupational procedures and materials.

The magnitude of the occupational dermatitis problem seems to vary with the figures that one reads. Schwartz[4] quoted figures computed in England in the 1920's which show that dermatoses constituted 56 per cent of all compensated occupational diseases.

TABLE 1.—*Distribution of United States Labor Force.*

Year	Farm Labor %	Farm Labor Millions	Nonfarm Labor %	Nonfarm Labor Millions	Total Labor Force Millions
1830	71	2.7	29	1.1	3.8
1930	21	10.1	79	38.4	48.5
1950	12	6.8	88	52.1	58.9

This considers occupational disease as distinguished from occupational injury. He also quoted reports from seven state compensation boards in this country indicating that only about 3.25 per cent of such cases were due to dermatitis, but that this constitutes 65 per cent of the cases classified as occupational disease rather than injury. These figures do not present a true picture of the industrial dermatitis problem since

relatively few of these cases come before the compensation board. In 1951 Dr. Samitz of the University of Pennsylvania stated that dermatitis still is the number one cause of time lost because of occupational diseases.[3] He quoted several sources to prove these points. Actually few accurate figures are available, and the relative importance of the problem will vary from plant to plant and from time to time in the same plant.

Let us consider briefly the various types of industrial dermatosis, the procedure in diagnosis, and measures for prevention and control.

CAUSES AND TYPES

Table 2 gives a general classification of the various causes of industrial eruptions. Its chief value is to show the multiple factors that must be considered in making a diagnosis and to give some idea of the relative importance of the many types of offending agents. Several of these factors may be operative in any one patient.

TABLE 2.—*Causes of Occupational Dermatoses.*

1. Physical
   a. Mechanical—friction, pressure, trauma, callus, abrasion.
   b. Heat (dry or wet)—prickly heat, pigmentation, burns.
   c. Cold—frostbite.
   d. Radioactive substances—burns, cancer.
   e. Sunlight—sunburn, pigmentation, cancer.
2. Biological
   a. Bacteria—anthrax, erysipeloid, psittacosis.
   b. Fungi—moniliasis, actinomycosis.
   c. Parasites—grain itch.
3. Chemical (Causes 75 per cent of all industrial dermatoses)
   a. Primary irritants (80 per cent)—acids, alkalies, solvents, petroleum products.
   b. Sensitizers (20 per cent)—dyes, antioxidants (chromate), resins, insecticides, poison ivy.

After Samitz, M. H.: "Recognition of Occupational Skin Disorders," presented at Symposium on Occupational Disease, Forrest Hills, N. Y., March, 1956.

The clinical syndromes produced by categories 1 and 2 need no particular discussion since they are not peculiar to industry. The chemical agents mentioned in category 3 account for 75 per cent of all industrial dermatoses and often are not encountered outside industry. Of these, primary irritants account for 80 per cent and sensitizers for 20 per cent. They produce eruptions which may be conveniently classified under five groups (table 3).

First are the acute eczematous eruptions showing erythema, edema, vesicles, and oozing. These are characteristic of the acute eruptions caused by sensitizing agents such as dyes and materials used in chemical plants or rubber processing plants. They also may be produced by exposure to primary irritants. This type eruption is easily recognizable, and the cause usually will have been identified by the worker himself as some unusual or accidental exposure to an irritant or to some known sensitizer.

TABLE 3.—*Types of Industrial Dermatoses.*

1. Acute eczematous eruptions—erythema, edema, vesicles, oozing, primary irritants, or sensitizers.
2. Chronic eczematous eruptions—erythema, thickening, scaling, primary irritants, or sensitizers.
3. Folliculitis and acneform eruptions—petroleum products, cutting oils, halogen compounds.
4. Keratoses—petroleum products, sunlight, arsenic.
5. Pigmentary disturbances
   Hyperpigmentation—heat
   Depigmentation—hydroquinone.

After Samitz, M. H.: "Recognition of Occupational Skin Disorders," presented at Symposium on Occupational Disease, Forrest Hills, N. Y., March, 1956.

The chronic patchy eczematous eruptions which most commonly occur on the hands are that type that diagnostically and therapeutically are the greatest problem. They often are caused by a combination of factors such as a mild sensitization reaction plus irritation produced by a strong cleanser. Sometimes when they are seen by the physician the picture is further complicated by too strong treatment used by the patient. In some instances secondary infection may occur changing the eruption into infectious eczematoid dermatitis, which may prolong the course of the disease. Other patients with the so-called atopic tendency may, by scratching, transform their contact dermatitis into an atopic eczema. Differentiation of the various factors in these patients may be very difficult, and from a medicolegal standpoint there are no tests to determine their relative importance in the persistence of what originally was a clear-cut occupational contact dermatitis.

The last three classifications in table 3 are fairly definite clinical entities and need no particular discussion.

Table 4 from Dr. Klauder's recent article on occupational dermatoses[1] gives an analysis of the causes of these eruptions in 2,407 patients. These patients constituted only 43 per cent of the 5,483 patients Dr.

TABLE 4.—*Causes of Occupational Dermatoses in 2,407 Patients.*

Agent	No.	%
Primary irritants—acids, alkali, solvents	667	27.7
Trauma—accidental injury	532	22.1
Sensitizing substances	366	15.2
Wet work—water, soap, detergents	362	15.0
Cleansing agents	239	9.9
Materials causing folliculitis	185	7.6
Physical and biological agents	56	2.3

After Klauder, J. V.: Some Aspects of Occupational Dermatoses, J.A.M.A. 160:442-448 (Feb. 11) 1956.

Klauder saw who were claimants under workmen's compensation in Pennsylvania. The other 57 per cent were eliminated as having nonoccupational conditions. I might observe here that an occupational dermatitis from a medical standpoint might be defined simply as "an eruption caused or aggravated by the nature of a person's work." From a worker's standpoint, however, an occupational dermatitis is "any eruption appearing while he is employed." Each case is a potential court case and many lead to controversy between the employee, management, the union, and the insurance company. Contrary to the usual premise of our courts that a man is innocent until proven guilty, in most instances a jury will consider a disabling eruption to be of occupational origin unless proven otherwise.

DIAGNOSIS

From a medical standpoint the diagnosis of an industrial dermatitis presents no unusual problems, but from the economic viewpoint it has many ramifications. The patient may have to change his job or occupation, and his earning ability may be impaired for a long period of time. The expenditure of considerable sums of money involving unemployment insurance, disability compensation, damage suits, and the resultant lawyers' fees may be influenced by the diagnosis. It might be mentioned that the question of who pays the medical bill, if it is paid, also may be dependent on the diagnosis.

Any doctor who undertakes to do industrial work of any type should feel obligated to acquire some special knowledge of the field in which he will work. In industrial dermatology one part of this special knowledge would be to familiarize himself with the mechanical and chemical hazards encountered in the particular plants he will serve. Adequate knowledge of this type can be acquired only by personal inspection of the plant. The doctor then will be familiar with the working condition of his patients relative to such things as dust or fume hazards, ventilation and air conditioning, cleansing facilities and cleaning agents used, and the various materials with which the workers come in contact. Knowledge of all these things will be helpful in the diagnosing of an eruption.

A certain amount of study in the field also is essential. Considerable basic knowledge can be acquired by reading a textbook such as Schwartz, Tulipan, and Peck[4] on the industries with which the doctor will work. For example, it would be difficult for a doctor to diagnose a "chrome ulcer" in a chromium electroplater if he did not know that platers worked with strong chromic acid solutions and that these solutions caused ulcers following minor injury. It also would be difficult for him to diagnose an oil acne on the arms of a machinist if this syndrome was unknown to him.

The recognition of the common nonindustrial dermatoses also is an important part of establishing a diagnosis. If an eruption definitely can be diagnosed as pityriasis rosea, lichen planus, or psoriasis, any question of occupational origin can be ruled out.

As in almost every other field of clinical medicine, a careful history and examination are the essential bases for a correct diagnosis. An adequate history should include the following information:

1. The type of work done and materials to which the worker is exposed.
2. The time that the worker has been on the same job and the time of onset of the eruption.
3. History of previous skin eruptions.
4. Whether or not other workers at the same job have similar trouble.
5. Whether or not the eruption clears when the patient is on vacation and recurs when he returns to work.
6. Off work habits and hobbies. (Shop work, painting, gardening, and other home activities can produce an occupational type dermatitis which would be indistinguishable from a dermatitis produced on the job.)

On examination of the patient, the sites of the eruption may give a clue as to the cause. Most industrial dermatoses occur on the hands or forearms. The next most common site is the face and neck, and third, when the irritant or sensitizer is in the form of a dust, the ankles and legs will be involved, as in cement dermatitis.

After such a history and physical examination with a background of knowledge about working conditions and materials, a decision usually can be made as to whether or not the eruption is of occupational origin. If a definite diagnosis still cannot be made, a patch test may give some further clue as to the cause of the eruption in certain instances.

The patch test is a useful tool only in the diagnosis of allergic or sensitization dermatitis. There are so many pitfalls in its application and interpretation that I wish to discuss it in some detail.

The technique of the test is simple. It involves the application in proper strength of a suspected material to a normal area of skin. A 1 cm. or ½ inch square of muslin is saturated with the material to be tested in the proper strength. The material may be in solution, ointment, or powder form. This patch is covered with a somewhat larger piece of cellophane, and this in turn is attached to the skin with adhesive or Scotch tape. Test patches are left on the skin 24 to 48 hours but should be removed earlier if itching develops. The test is read 15 minutes, 24 hours, and 72 hours after removal of the patches. Some delayed reactions may not show up for even longer periods of time.

The tests are interpreted according to the criteria in table 5.

Some physicians believe that the open test may give a truer picture of a patient's reaction to a sensitizer than the closed or covered patch test since it usually will simulate the natural contact more closely. With this technique the material to be tested is rubbed or painted on the skin and no covering is applied. This technique is routine in testing for sensitivity to weeds.

TABLE 5.—*Interpretations of Patch Tests.*

Negative – no reaction.
1 plus – redness only.
2 plus – 1 plus + swelling and papules.
3 plus – 2 plus + vesicles.
4 plus – 3 plus + confluent vesicles or bullae.
5 plus – 4 plus + necrosis.

The proper concentrations of many substances to be used for patch testing have been determined by experience and are listed in several articles and texts on industrial dermatology, such as Schwartz, Tulipan, and Peck's "Occupational Diseases of the Skin," or Sulzberger's "Dermatologic Allergy."[6]

Factors which may cause both false positive and false negative results are listed in table 6.

Patch tests should not be done while a dermatitis is extensive and acute. The skin is hyperactive at this time. False positive reactions may occur, and there is a definite danger of causing an exacerbation or even a generalization of the eruption. This occasionally happened in the "old days" with arsenical dermatitis, and theoretically it can happen with any severe sensitization eruption.

TABLE 6.—*Causes of False Patch Test Readings.*

1. False positive (Reaction or Interpretation):
   a. Use of a primary irritant or too strong a solution (this occurs with solvents, acids, or bases).
   b. Hyperreactivity of the patient's skin generally due to an extensive dermatitis.
   c. Testing with wrong substances; for instance, a positive reaction to poison ivy does not mean that the eruption is due to this contact.
2. False negative (Reaction or Interpretation):
   a. Too weak a concentration was used.
   b. The sensitizing substance causing the eruption was not suspected and tested.
   c. A combination of factors may be required to produce the dermatitis.
   d. Rarely, hyposensitivity may have developed.
   e. Steroid drugs.

Patch tests with highly sensitizing substances should not be done without good reason since the test itself might act as a sensitizing exposure. If tests are being done with a substance the primary irritant or sensitizing properties of which are unknown, the doctor should start with very weak concentrations and do preliminary tests on himself or on a volunteer.

With these considerations and cautions in mind, a positive reaction to a properly done patch test may identify the offending substance among several suspected materials to which the worker is exposed. Conversely, a correctly done negative test may rule out certain suspected allergens. While not infallible, as previously indicated, patch tests give much more reliable information than the usual intradermal skin tests.

With a diagnosis established and the offending substances identified we then can consider prevention and treatment.

PREVENTION AND TREATMENT

Prevention and treatment of industrial dermatoses may be discussed together since preventive measures usually are the principal concern in treatment. Actual treatment of the dermatitis will be the same as for any other eczematous process, and it is not feasible to discuss such treatment in this paper. It is in the field of prevention that management (meaning particularly plant and production engineers), labor (referring particularly to seniority and transfer regulations imposed by the union), and the industrial medical man can accomplish so much.

Ideally, consultations should be held between trained industrial physicians and the designers of plants and machinery so that irritants or potential sensitizers are confined, and contact with workers is minimized or eliminated. Proper ventilation, air conditioning, exhaust hoods over fume producing tanks, dust removal, and so forth should be incorporated in plans of the plants where known industrial hazards will arise. Mechanization or automation will tend to minimize exposure to dermatologic hazards.

Production engineers should have the advice of medical consultants as to whether or not materials used are irritants or potent sensitizers. If new materials with unknown sensitizing properties are to be used a so-called prophetic patch test series can be run to get some idea of their sensitizing potentialities before large groups of workers are exposed to them.

If a certain amount of contact with irritating materials is unavoidable, protective clothing such as rubber gloves or rubberized clothing may be helpful. When clothing becomes soiled with hazardous material, frequent changing may prevent an eruption. Providing cleansers suitable to the type of dirt encountered and convenient cleansing facilities also are important in prevention of some type of eruptions, for example, oil acne or tar keratoses. Cleansers such as strong or abrasive soaps, detergents, and solvents may be either primary or contributory causes of an industrial dermatitis, and their use should be avoided when possible. Instruction of workers in how to handle

irritant or sensitizing material and the use of warning signs or labels may make workers more careful.

The use of protective creams, such as the silicones, has been disappointing in general. In some instances they will protect against a transient exposure to a primary irritant or a mild sensitizer. They have been helpful in fiber glass dermatitis, but in most instances they have failed to prevent the recurrences of a sensitization type eruption. They should not be used while a dermatitis is still present since the creams themselves may be aggravating to the eruption.

If a dermatitis is limited in extent and severity, if the offending agent is known, and if a change of work would mean considerable economic hardship, the patient may be allowed to return to work on a trial basis using all possible protective measures. If the dermatitis recurs, a change of work is imperative since in general the longer a dermatitis persists and the more severe it gets, the longer its course after exposure is discontinued. For this same reason, the early detection and investigation of an eruption in an employee should be stressed. The workers and foremen should be instructed to report any such difficulty as soon as it is detected.

Occasionally after a long rest period during which the patient is free from eruption, he may return to work without trouble. This is more likely to occur if the eruption is due to a mild irritant rather than in the true sensitization eruption, although instances of the latter occurrence have been reported.

Consideration of skin types in the selection of employees for certain jobs is a field of preventive industrial medicine which has had little attention. Two examples come to mind. Men with acne should not be assigned to jobs, such as machinists' work, where they will be exposed to oils. Men with blond complexions, red hair, and blue eyes should not be hired to work in railroad section gangs or in any job where they will be exposed to intense sunlight. The preemployment patch test for detecting a sensitivity to substances to which the worker may be exposed is a controversial subject which time does not permit me to discuss here.

I have tried to give a general picture of the field of industrial dermatology and its problems. Most of the examples I have quoted are from the railroad industry and from those which use chromate. This is only because my experience in industrial dermatology has been chiefly in these fields. Every large industry has comparable hazards and problems, but the same general principles are applicable to all.

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♦ Dr. Walsh, Medical Arts Building, Fort Worth.

CASE REPORTS

Congenital Hemolytic Anemia Treated At the Age of 60

JOSHUA SEIDEL, M. D.;
MARCELINO F. GUZMAN, M. D.;
RUSSELL K. HORSMAN, M. D.

Kerrville, Texas

and ALBERT W. HARTMAN, M. D.

San Antonio, Texas

THE Veterans Administration Hospital at Kerrville has a capacity of 449 beds. The hospital is primarily assigned the task of treating tuberculosis patients. Because of the fact that the nearest general medical and surgical hospital is 170 miles away, about 10 per cent of the cases are usually general medical or surgical in nature. At any one time about 20 per cent of the patient population is more than 60 years of age. These are commonly World War I veterans with a fair sprinkling of Spanish-American War veterans. Those of our patients in the older age group present all of the geriatric problems met with in the general population. Those who are tuberculous have to be treated for their nontuberculous conditions as well as their tuberculosis. We have found that patients whose general medical and surgical conditions are treated adequately fare better from a tuberculosis standpoint than those in whom these conditions are ignored.

We have had occasion recently to treat a tuberculous patient, in his sixtieth year, for congenital hemolytic icterus.

Congenital hemolytic jaundice[1, 2, 3] is characterized by spherocytosis, fragility of red blood corpuscles in hypotonic saline solutions, a variable degree of anemia of hemolytic type, and splenomegaly. The disorder is chronic, congenital, and often familial.

Dr. Joshua Seidel, chief, Surgical Service; Dr. Guzman, assistant chief, Surgical Service; and Dr. Horsman, chief, Medical Service, are from the Veterans Administration Hospital, and Dr. Hartman is general surgical consultant to the Veterans Administration Hospital, Kerrville.

A case of congenital hemolytic anemia treated in a 60 year old man with chronic pulmonary tuberculosis suggests that concomitant conditions should be sought in patients in tuberculosis hospitals and definitive treatment undertaken.

Minkowski is said to have published first an accurate description of the disease in 1900. Chaufford discovered the fragility of the red blood corpuscles in 1907. The disease is hereditary, and family trees of three and four generations have been described with the condition. The trait is a mendelian dominant and is transmitted by either parent. The offspring of those who escape the disease are also free.

Symptoms vary greatly in degree and time when first noticed. Degree of icterus is also variable. Exacerbation of symptoms is characteristic. An exacerbation is characterized by fever, lassitude, palpitation, and dyspnea. There may be abdominal pain, as well as vomiting and anorexia. These exacerbations are thought to be due to periodic increased hemolysis. Some investigators dispute this thought and claim that other, more complicated factors cause these symptoms.

Cholelithiasis is present in 68 per cent of patients. Chronic leg ulcers may occur. The spleen may not be palpable but is palpable and large in most cases. The liver may be enlarged. There may be other congenital anomalies present; those most noticeable are of the skeleton. Thickening and striation of the frontal and parietal bones are the most frequent finding.

The anemia is usually only moderate in degree. The erythrocyte count usually varies between 3 and 4 million. A crisis may cause the count to fall 1 to 2 million. Mean corpuscular volume is usually below normal. Spherocytosis is characteristic. Reticulocytes may be as high as 92 per cent of all the red corpuscles; 5 to 20 per cent is usual. Signs of active erythropoiesis are prominent after a hemolytic crisis. The fragility of the red blood corpuscles in hypotonic saline solution is increased in typical cases. The point of beginning hemolysis varies from .51 to .72 per cent and may be as high as .87 per cent. Usually control blood starts hemolyzing at about .45 per cent (sodium chloride). The leukocytes are usually normal. There may be a shift to the left after a crisis. Platelet count is usually normal. The icteric index is usually between 15 and 30. The van den Bergh test is indirect. The bone marrow shows hyperplasia of the normoblastic type.

The diagnosis is based on (1) hemolytic anemia, (2) reticulocytosis, (3) spherocytosis, (4) erythrocyte fragility, (5) splenomegaly, (6) jaundice, and (7) normoblastic hyperplasia of bone marrow.

The treatment is splenectomy. Spherocytosis and increased cell fragility usually persist after splenectomy. Symptomatic improvement is marked.

The illness is more serious if symptoms first appear in childhood. Death may occur during a crisis. Operative mortality is higher in children. Once jaundice has set in, there is usually no relief of symptoms until splenectomy is performed.

The spleen usually weighs 1,000 to 1,500 Gm. Venous sinuses are enlarged and dilated. The pulp is packed with erythrocytes which distend and distort it. Iron pigment is increased in hepatic and Kupffer's cells. Bilirubin stones may be found in the gallbladder.

Most students of this disease hold the view that the fundamental abnormality is an inherited trait whereby abnormal erythrocytes are produced. These approximate spheres in shape and are more fragile than normal red blood cells. Splenic enlargement ensues because of the increased demand placed on the organ. The persistence of increased fragility after splenectomy, without anemia, supports this view.

CASE REPORT

CASE 1.—A 60 year old World War I veteran gave a long history of pain in the right upper abdominal quadrant and of jaundice. The first time he noted pain in the right upper quadrant and an icteric tint to his skin was in 1915 at the age of 20 years. He had had one or two attacks of right upper quadrant pain and icterus every year since then. Cholecystostomy was performed in 1940 and 1942, and stones were removed from the gallbladder at both operations. The patient had never had clay colored stools, nor had they ever been darker than normal. There was a history of long standing secondary anemia requiring transfusions on several occasions.

In August, 1954, he was given liver extract and vitamin B_{12} twice weekly. At that time he reported to a private hospital in Texas, complaining of weakness, dyspnea, weight loss, chest pain, and occasional abdominal pain, for the previous six months. A roentgenogram of the chest showed chronic pulmonary tuberculosis. Sputum examinations were positive for acid-fast bacilli. A cholecystogram showed stones in the hypochondrium. Treatment of the pulmonary tuber-

culosis was started with 1 Gm. of dihydrostreptomycin two times weekly and 300 mg. daily of isonicotinic acid hydrazide. He was admitted to the Veterans Administration Hospital, Kerrville, on November 16, 1954. In requestioning the patient, after blood studies were made at this hospital, it was found that his father, who had died at the age of 74 years, had had recurrent bouts of jaundice all of his life. The patient's mother, 80 years of age, was living and well. Two half brothers, one brother, and a half sister were living and well.

The patient's blood pressure was 148/86. He weighed only 147 pounds although his height was 6 feet and ½ inch. The sclera had an obvious yellow tinge. There was a small ulcerated area on the bridge of the nose measuring about 3 mm. in diameter. A similar area was noted on the left ear. There was a slight dullness in the upper third of the right part of the chest. Vocal and tactile fremitus was slightly increased and breath sounds were distant over the same area. No rales were present.

A systolic murmur was audible over the mitral area. Heart sounds were somewhat distant. There was a right pararectus scar (site of cholecystostomies). The spleen was felt to be enlarged to about five finger breadths below the costal margin. The organ was easily palpable and inferiorly the edge was sharp. It was firm and not tender. There was some tenderness and an impression of a palpable liver below the right costal margin. No other masses were palpated in the abdomen and no tenderness was elicited in the lower portion of the abdomen. The skin was slightly icteric throughout.

Roentgenograms of the right lung on admission showed thinly scattered fibrocalcareous infiltration in the upper part of the lung without evidence of cavitation. There was widening of the right cardiac border and definite emphysema. Marked enlargement of both liver and spleen was seen on a kidney, ureter, and bladder film. Gallstones were thought to be visible on films made of the spine. Comparison with chest films made at the private hospital on August 5, 1954, showed that considerable improvement of the tuberculosis had occurred before the patient was admitted to this hospital. Comparison made with films made at the hospital in New Mexico in 1940 showed that there was minimal tuberculosis at that time and that the emphysema had increased since 1940, The spleen and liver were large at that time. A cholecystogram made on December 29, 1954, was normal. An intravenous cholecystogram with cholografin on January 13 also showed a normal gallbladder. Repeat roentgenograms of the chest made before discharge showed no change from that made at time of admission.

In the laboratory work-up of the patient one sputum smear was found to be positive and 13 cultures negative for acid-fast bacilli. Urinalysis was normal. V.D.R.L. was negative. Reticulocyte count was 12 per cent. Serum bilirubin was 1.8 mg. per 100 cc. The indirect van den Bergh test was positive and the direct was positive delayed. White blood count was 5,250, with neutrophils 54 per cent, lymphocytes 43 per cent, monocytes 2 per cent, and eosinophils 1 per cent; red blood count was 3 million, hemoglobin 58 per cent, sedimentation rate 20 mm. per hour, and hematocrit 32. Fragility test showed the control beginning hemolysis .42 per cent, complete hemolysis .33 per cent, the patient's beginning hemolysis .57 per cent and complete .39 per cent. The reticulocyte count was 14 per cent.

Laboratory tests on January 13 had the following results: icteric index 19.6 and serum bilirubin 2.7 mg. per 100 cc. Additional tests on January 26 showed platelets 510,000, hematocrit 26, and red blood count 2,700,000. Serum bilirubin on February 2 was 1.6 mg. per 100 cc. Prothrombin time was 28 per cent of normal. Blood smears showed anisocytosis, poikilocytosis, polychromatophilia, stippling, and spherocytosis. Bone biopsy on January 18 of the anterior superior spine showed hyperplastic bone marrow with erythroblastic maturation arrest.

The patient was treated for his chronic pulmonary tuberculosis with dihydrostreptomycin 1 Gm. two times a week and isonicotinic acid hydrazide 300 mg. daily. His small facial carcinomas were treated. The patient's symptoms were primarily referable to what was considered to be congenital hemolytic anemia. The patient had periods of weakness, dyspnea, and abdominal pain. The blood studies were suggestive and bone marrow was seen to be characteristic of congenital hemolytic icterus.

Splenectomy was considered to be the treatment of choice. Supportive care in the hope of increasing his erythrocyte count was given for a few weeks without satisfactory response. After four preoperative transfusions, a splenectomy was done February 17. Four transfusions were given during the surgery.

The spleen weighed 990 Gm. and its gross appearance was characteristic of the spleen seen in congenital hemolytic anemia.

The gross report was of a spleen weighing 990 Gm., with its greatest over-all dimensions 28 by 15 by 12 cm. The anterior lateral surface was a yellowish pink tissue which appeared to be capsular and subcapsular. The opposite surface had numerous such areas varying in size from 0.5 cm. to 5 cm. in their greatest dimensions. The remaining surface was covered by a smooth thick glistening capsule. On cut section the surface exuded a considerable amount of dark red blood without pressure. The capsule described anteriorly averaged 0.5 cm. in thickness. Remaining plaques described were 0.1 to 0.2 cm. in thickness. The splenic parenchyma was fibrotic throughout and the follicular pattern was entirely obscured. Representative sections were taken.

Microscopic report of the sections showed the tissue to be spleen. The parenchyma was markedly congested and the sinusoids stood out prominently by virtue of the fact that they were lined by numerous endothelial cells, which seemed to be increased in number and almost cuboidal in shape. The red pulp surrounding the sinusoids was filled with red cells. The malpighian corpuscles could be made out but seemed not to stand out too prominently. Sections also showed hyalinization and that the capsule was thickened. The general architecture was not destroyed. The diagnosis was congestive splenomegaly compatible with familial hemolytic icterus.

A combined abdominal-thoracic approach was used to facilitate the splenectomy. Exploration of the upper part of the abdomen during surgery revealed that the gallbladder was free of stones and still adherent to the anterior abdominal wall. The liver was not as large as it was thought to be when seen by roentgen ray and did not seem abnormal in consistency. The major vessels of the spleen were greatly enlarged and the artery measured about 1.5 cm. in diameter. An equal volume of arterial blood was supplied to the spleen by collateral vessels, which required many individual ligations before the spleen could be completely liberated and removed.

The patient's postoperative course was uneventful, and his serum bilirubin was 1.1 mg. per 100 cc. one week postoperatively and .4 mg. per 100 cc. three months postoperatively. By three weeks postoperatively the red blood count had gone to 4.9 million, the hematocrit was 48, and platelets were 420,890. Three months postoperatively the red count had dropped from the high of 4,900,000 to a stable 4,300,000 and 86 per cent hemoglobin, 393,000 platelets, and a 42 hematocrit.

The patient's general condition was excellent from the time of operation. His pulmonary condition was considered

to be stabilized and he was considered to have received maximum hospital benefits and was discharged June 2, 1955, from the hospital.

SUMMARY AND CONCLUSIONS

The case history and treatment of a 60 year old World War I veteran are presented. On his admission to the hospital the primary cause of symptoms was thought to be chronic pulmonary tuberculosis. Upon further study, however, it was found that he was suffering from congenital hemolytic anemia and that definitive therapy had never been given. Splenectomy was performed three months after admission to our hospital and after careful study of the patient's case. All sputum cultures during the patient's stay in the hospital were negative for acid-fast bacilli, and there was no roentgenographic change during his stay in the hospital. It is believed that the clinical improvement shown by the patient was primarily due to definitive therapy undertaken for congenital hemolytic anemia after many years of known symptoms.

A condition commonly thought to be associated with and treated in the young has been found and treated in an older man.

The fact that a patient has survived 60 years of his life with a debilitating chronic disease is no excuse for withholding proper treatment in later life, when a diagnosis is finally made.

The symptoms of congenital hemolytic anemia may to a certain extent resemble those of chronic pulmonary tuberculosis, and it is also true that the symptoms of many other diseases may resemble those of chronic pulmonary tuberculosis. It is therefore essential that patients in a tuberculosis hospital be investigated thoroughly for other concomitant conditions and/or diseases and that they be treated for these conditions or diseases. Treatment, of course, should be carefully weighed with reference to its effect on the patient's tuberculous disease.

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Dr. Seidel, Dr. Guzman, and Dr. Horsman, Veterans Administration Hospital, Kerrville.

Dr. Hartman, Nix Professional Building, San Antonio 5.

MEDICAL NEWS

★ Coming Meetings

Texas Medical Association, Dallas, April 27-May 1, 1957. Dr. Milford O. Rouse, Dallas, Pres.; Mr. C. Lincoln Williston, 1801 North Lamar Blvd., Austin, Executive Secy.

American Medical Association, Clinical Meeting, New York, June 3-7, 1957. Dr. Dwight H. Murray, Napa, Calif., Pres.; Dr. George F. Lull, 535 North Dearborn, Chicago 10, Secy.

Current Meetings

DECEMBER

American Academy of Dermatology and Syphilology, Chicago, Dec. 8-13, 1956. Dr. George M. Lewis, N. Y., Pres.; Dr. James R. Webster, 55 E. Washington, Chicago 2, Secy.

Radiological Society of North America, Chicago, Dec. 2-7, 1956. Dr. Clarence E. Hufford, Toledo, Ohio, Pres.; Dr. D. S. Childs, 713 E. Genesee, Syracuse 2, N. Y., Secy.

Southern Surgical Association, Boca Raton, Fla., Dec. 4-6, 1956. Dr. Deryl Hart, Durham, N. C., Pres.; Dr. George G. Finney, 2947 St. Paul, Baltimore, Secy.

Private Clinics and Hospitals Association of Texas, Dallas, December 8-9, 1956. Dr. J. P. Anderson, Brady, Pres.; Mr. C. H. Rugeley, Wharton, Secy.

Texas Academy of Internal Medicine, Dallas, Dec. 8-9, 1956. Dr. DeWitt Neighbors, Fort Worth, Pres.; Dr. Hugo Engelhardt, 1216 Main, Houston, Secy. Meetings restricted to members.

Texas Association of Blood Banks, Dallas, Dec. 1, 1956. Dr. O. J. Wollenman, Jr., Fort Worth, Pres.; Miss Marjorie Saunders, 3707 Gaston Ave., Dallas, Secy.

Texas Division, American Cancer Society, Dallas, Dec. 7-8, 1956. Mr. Leonard M. Gunderson, Amarillo, Pres.; Mr. Curt W. Reimann, 1609 Colorado, Austin, Executive Director.

Texas Neuropsychiatric Association, Dallas, Nov. 30-Dec. 1. Dr. John L. Otto, Galveston, Pres.; Dr. Clarence S. Hoekstra, 2600 Wellborn, Dallas, Secy.

Texas Rheumatism Association, Dallas, Dec. 7, 1956. Dr. Frank F. Parrish, Jr., Houston, Pres.; Dr. Warren W. Moorman, 901 W. Leuda, Fort Worth, Secy.

Texas Society of Ophthalmology and Otolaryngology, Dallas, Dec. 7-8. Dr. Kelly Cox, Dallas, Pres.

Texas State Board of Medical Examiners, Fort Worth, Dec. 6-8, 1956. Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth, Secy.

JANUARY

Texas Radiological Society, Corpus Christi, Jan. 18-19, 1957. Dr. J. R. Riley, Corpus Christi, Pres.; Dr. J. E. Miller, 6407 Forest Lane, Dallas, Secy.

Texas Society of Pathologists, Galveston, Jan. 26-27, 1957. Dr. Sidney W. Bohls, Austin, Pres.; Dr. M. H. Grossman, St. Paul Hospital, Dallas, Secy.

Twelfth District Society, Cleburne, Jan. 8, 1957. Dr. R. Henry Harrison, Bryan, Pres.; Dr. W. M. Avent, 1716 Colcord, Waco, Secy.

International Medical Assembly of Southwest Texas, San Antonio, Jan. 28-30, 1957. Dr. John C. Parsons, 1125 Nix Professional Bldg., San Antonio, Secy.

National and Regional

American Academy of Allergy, Los Angeles, Feb. 4-6, 1957. Dr. Carl E. Arbesman, Buffalo, N. Y., Pres.; Dr. Francis C. Lowell, 65 E. Newton, Boston, Secy.

American Academy of General Practice, St. Louis, March 25-28, 1957. Dr. J. S. De Tar, Milan, Mich., Pres.; Mr. Mac F. Cahal, Volker Blvd. at Brookside, Kansas City 12, Executive Secy.

American Academy of Obstetricians and Gynecologists. Dr. R. Gordon Douglas, New York, Pres.; Dr. John C. Ullery, Ohio State University Hospital, Columbus, Secy.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 13-18, 1957. Dr. Earling W. Hansen, Minneapolis, Pres.; Dr. W. L. Benedict, 100 First Ave. Bldg., Rochester, Minn., Secy.

American Academy of Pediatrics, Chicago, Oct. 5-10, 1957. Dr. Edgar E. Martmer, Detroit, Pres.; Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Secy.

American Association for Thoracic Surgery, Chicago, May 4-7, 1957. Dr. Cameron Haight, Ann Arbor, Mich., Pres.; Dr. Hiram T. Langston, 600 S. Kingshighway, St. Louis 10, Mo., Secy.

American Association of Genito-Urinary Surgeons, Hot Springs, Va., May 1-3, 1957. Dr. Archie L. Dean, New York, Pres.; Dr. John A. Taylor, 2 E. 54th St., New York 22, Secy.

American Association of Obstetricians and Gynecologists, Hot Springs, Va., Sept. 5-7, 1957. Dr. F. Bayard Carter, Durham, N. C., Pres.; Dr. E. Stewart Taylor, University of Colorado School of Medicine, 4200 E. 9th, Denver, Secy.

American Cancer Society, New York, Oct. 30-Nov. 1, 1957. Dr. D. A. Wood, San Francisco, Pres.; Mr. M. R. Runyon, 521 W. 57th, New York, Executive Vice-Pres.

American College of Allergists, Chicago, March 20-22, 1957. Dr. Ethan Allen Brown, Boston, Pres.; Dr. Giles A. Koelsche, Mayo Clinic, Rochester, Minn., Secy.

American College of Chest Physicians, New York, May 29-June 2, 1957. Dr. Herman J. Moersch, Rochester, Minn., Pres.; Mr. Murray Kornfeld, 112 E. Chestnut, Chicago 11, Executive Secy.

American College of Gastroenterology, Boston, Oct. 21-26, 1957. Dr. Arthur A. Kirchner, Los Angeles, Pres.; Mr. Daniel Weiss, 33 West 60th, New York 23, Executive Director.

American College of Physicians, Boston, April 8-12, 1957. Dr. Walter L. Palmer, Chicago, Pres.; Mr. E. R. Loveland, 4200 Pine, Philadelphia 4, Secy.

American College of Radiology, Chicago, Feb. 8-9, 1957. Dr. Wilbur Bailey, Los Angeles, Pres.; Mr. W. C. Stronach, 20 N. Wacker Dr., Chicago 6, Executive Secy.

American College of Surgeons, Chicago, Oct. 6-10, 1958. Dr. Daniel C. Elkin, Lancaster, Ky., Pres.; Dr. Michael L. Mason, 40 E. Erie, Chicago 11, Secy.

American Congress of Physical Medicine and Rehabilitation, Los Angeles, Sept. 8-13, 1957. Dr. A. B. C. Knudson, Washington, D. C., Pres.; Dr. Frances Baker, 1 Tilton Ave., San Mateo, Calif., Secy.

American Congress on Obstetrics and Gynecology. Dr. R. Gordon Douglas, 116 S. Michigan Ave., Chicago 3, Chm.

American Dermatological Association, Belleair, Fla., April 13-17, 1957. Dr. Carroll S. Wright, Philadelphia, Pres.; Dr. J. Lamar Callaway, Duke Hospital, Durham, N. C., Secy.

American Gastro-Enterological Association, Colorado Springs, May 17-18, 1957. Dr. Sam A. Wilkinson, Jr., Boston, Pres.; Dr. H. Marvin Pollard, University Hospital, Ann Arbor, Mich., Secy.

American Gynecological Society, Hot Springs, Va., May 27-29, 1957. Dr. Norman F. Miller, Ann Arbor, Mich., Pres.; Dr. A. A. Marchetti, 3800 Reservoir Rd., N.W., Washington 7, D. C., Secy.

American Heart Association. Dr. Irvine H. Page, Cleveland, Pres.; Mr. Irving B. Hexter, 44 E. 23rd, New York 10, Secy.

American Hospital Association, Atlantic City, Sept. 30-Oct. 3, 1957. Dr. Albert W. Snoke, New Haven, Conn., Pres.; Dr. Edwin L. Crosby, 18 E. Division, Chicago, Executive Director.

American Laryngological, Rhinological, and Otological Society, San Francisco, Calif., 1958. No 1957 meeting. Dr. Percy E. Ireland, Toronto, Ont., Canada, Pres.; Dr. C. S. Nash, 277 Alexander, Rochester 7, N. Y., Secy.

American Neurological Association, Atlantic City, June 17-19, 1957. Dr. H. Houston Merritt, New York 32, Pres.; Dr. Charles Rupp, 133 S. 36th, Philadelphia 4, Secy.

American Ophthalmological Society, Hot Springs, Va., May 30-June 1, 1957. Dr. Frederick C. Cordes, San Francisco, Pres.; Dr. M. C. Wheeler, 30 W. 59th, New York 19, Secy.

American Orthopedic Association, Hot Springs, Va., June 24-27. Dr. David M. Bosworth, New York, Pres.; Dr. Harold A. Safield, 715 Lake St., Oak Park, Ill.

American Pediatric Society, Carmel, Calif., June 17-19, 1957. Dr. Daniel C. Darrow, Mission, Kan., Pres.; Dr. A. C. McGuinness, 1427 I St., N.W., Washington 5, D. C., Secy.

American Proctologic Society, New Orleans, April 24-27. Dr. Rufus C. Alley, Lexington, Ky., Pres.; Dr. Karl Zimmerman, 3500 Fifth Ave., Pittsburgh 13, Secy.

American Psychiatric Association, Chicago, May 13-17, 1957. Dr. Francis J. Braceland, Hartford 2, Conn., Pres.; Dr. William Malamud, 80 E. Concord, Boston 18, Secy.

American Public Health Association, Cleveland, Nov. 11-15, 1957. Dr. John W. Knutson, Washington, D. C., Pres.; Dr. R. M. Atwater, 1789 Broadway, New York 19, Executive Secy.

American Society of Anesthesiologists, Los Angeles, Oct. 14-18, 1957. Dr. Irving M. Pallin, Brooklyn, Pres.; Dr. J. E. Remlinger, Jr., 188 W. Randolph, Chicago 1, Secy.

American Society of Clinical Pathologists, Sept. 29-Oct. 4, 1957. Dr. J. L. Goforth, Dallas, Pres.; Dr. Clyde G. Culbertson, 1040-1232 W. Michigan, Indianapolis 7, Secy.

American Surgical Association, Chicago, May 8-10, 1957. Dr. Loyal Davis, Chicago, Pres.; Dr. R. Kennedy Gilchrist, 59 East Madison, Chicago 3, Secy.

American Urological Association, Pittsburgh, May 6-9, 1957. Dr. George C. Prather, Brookline, Mass., Pres.; Dr. Samuel L. Raines, 188 S. Bellevue Blvd., Memphis, Tenn., Secy.

Association of American Physicians and Surgeons, Delegates and Assembly, Miami Beach, Fla., April 25-27, 1957. Dr. Charles W. Pavey, Columbus, Ohio, Pres.; Mr. Harry E. Northam, 185 N. Wabash Ave., Chicago 1, Executive Secy.

International College of Surgeons, U. S. Chapter, Chicago, Sept. 9-12, 1957. Dr. Curtice Rosser, Dallas, Pres.; Dr. Karl Meyer, 1516 Lake Shore Dr., Chicago, Secy.

National Tuberculosis Association, Kansas City, May 5-10, 1957. Dr. Howard W. Bosworth, Los Angeles, Pres.; Mrs. Morrell DeReign, 1790 Broadway, New York 19, Secy.

Southern Medical Association, Miami Beach, Nov. 11-14, 1957. Dr. J. P. Culpepper, Jr., Hattiesburg, Miss., Pres.; Mr. V. O. Foster, 1020 Empire Bldg., Birmingham 3, Secy.

Southern Psychiatric Association, Nassau, Oct. 6-8, 1957. William H. McCullagh, Jacksonville, Fla., Pres.; Dr. Joseph L. Knapp, 210 N. Westmoreland, Dallas, Secy.

Southwest Allergy Forum, Fort Worth, May 5-7, 1957. Dr. Truman C. Terrell, Fort Worth, Pres.; Dr. Sim Hulsey, 701 Fifth Ave., Fort Worth, Secy.

Southwest Regional Cancer Conference. Dr. John J. Andujar, 1404 Pennsylvania, Fort Worth 4, Chm.

Southwestern Medical Association, El Paso, Oct. 8-11, 1957. Dr. Celso Stapp, El Paso, Pres.; Dr. Russell L. Deter, 1501 Arizona St., El Paso, Secy.

Southwestern Society of Nuclear Medicine, Houston, April, 1957. Dr. Henry H. Turner, Oklahoma City, Pres.; Dr. J. R. Maxfield, Jr., 311 Medical Arts Bldg., Dallas, Secy.

Southwestern Surgical Congress, Wichita, Kan., April 15-17, 1957. Dr. John V. Goode, Dallas, Pres.; Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secy.

Tri-State Medical Assembly, Shreveport, September, 1957. Dr. H. O. Padgett, Marshall, Pres.; Dr. Jason Sanders, Sanders Clinic, Kings Highway, Shreveport, La., Secy.

State

Texas Academy of General Practice, Dallas, Sept. 22-25, 1957. Dr. George V. Launey, Jr., Dallas, Pres.; Mr. Donald C. Jackson, 308 W. 15th, Austin, Executive Secy.

Texas Air-Medics Association, Dallas, April 28-29, 1957. Dr. W. A. Ostendorf, Fort Worth, Pres.; Dr. C. F. Miller, P. O. Box 1338, Waco, Secy.

Texas Association of Obstetricians and Gynecologists, San Antonio, Feb. 23, 1957. Dr. Carey Hiett, Fort Worth, Pres.; Dr. Oran V. Prejean, 4317 Oak Lawn, Dallas, Secy.

Texas Chapter, American College of Chest Physicians, Dallas, April 28, 1957. Dr. Walter C. Brown, Corpus Christi, Pres.; Dr. L. M. Shefts, 510 Moore Bldg., San Antonio, Secy.

Texas Chapter, American Association of Public Health Physicians, Dallas, April 28, 1957. Dr. W. V. Bradshaw, Jr., Fort Worth, Pres.; Dr. A. R. Doane, 410 E. 5th, Austin, Secy.

Texas Club of Internists. Dr. Hatch Cummings, Houston, Pres.; Dr. L. C. Carter, 2600 Procter, Port Arthur, Secy.

Texas Dermatological Society, Dallas, April 28-29, 1957. Dr. Thomas L. Shields, Fort Worth, Pres.; Dr. E. N. Walsh, 1310 Medical Arts Bldg., Fort Worth, Secy.

Texas Diabetes Association, Dallas, April 28, 1957. Dr. Edwin L. Rippy, Pres.; Dr. Richard E. Nitschke, 1702 Nix Professional Bldg., San Antonio, Secy.

Texas Geriatrics Society, Dallas, April 30, 1957. Dr. Wendell D. Gingrich, Galveston, Pres.; Dr. J. O. S. Holt, Jr., 3707 Gaston Ave., Dallas, Secy.

Texas Heart Association, Dallas, April 28, 1957. Dr. D. D. Warren, Waco, Pres.; Mr. Edgar M. Brown, 404 Jesse H. Jones Library Bldg., Texas Medical Center, Houston 25, Executive Director.

Texas Hospital Association, Houston, May 14-16, 1957. Mr. H. M. Cardwell, Lufkin, Pres.; Mr. O. Ray Hurst, Executive Director, 2208 Main, Dallas, Secy.

Texas Industrial Medical Association, Dallas, April 30, 1957. Dr. V. C. Baird, Houston, Pres.; Dr. Robert A. Wise, Box 2180, Houston, Secy.

Texas Ophthalmological Association, Dallas, April 30, 1957. Dr. Thomas J. Vanzant, Houston, Pres.; Dr. Louis Daily, Medical Arts Bldg., Dallas, Secy.

Texas Orthopedic Association, Dallas, April 29, 1957. Dr. John J. Hinchey, San Antonio, Pres.; Dr. Margaret Watkins, 3629 Fairmount, Dallas, Secy.

Texas Pediatric Society, Austin, Oct., 1957. Dr. E. M. Wier, Fort Worth, Pres.; Dr. James N. Walker, 5216 W. Freeway, Fort Worth, Secy.

Texas Proctologic Society, Houston, February, 1957. Dr. Harry B. Burr, Houston, Pres.; Dr. C. P. Hardwicke, 920 E. 32nd, Austin, Secy.

Texas Public Health Association, Houston, Feb. 17-20, 1957. W. T. Ballard, Tyler, Pres.; Mr. H. E. Drumwright, City Health Department, Dallas, Executive Secy.

Texas Society for Mental Health, Dallas, March 7-9, 1957. Dr. Carmen Miller, Dallas, Pres.; Mr. John Lane, 2510 San Antonio, Austin, Executive Director.

Texas Society of Anesthesiologists, Dallas, April 28, 1957. Dr. Charles R. Allen, Galveston, Pres.; Dr. Randle J. Brady, 3317 Binz, Houston, Secy.

Texas Society of Gastroenterologists and Proctologists, Dallas, April 28, 1957. Dr. John McGivney, Galveston, Pres.; Dr. O. P. Griffin, 1101 Medical Arts Bldg., Fort Worth, Secy.

Texas Society of Plastic Surgeons, April 27, 1957. Dr. Thomas D. Cronin, Houston, Pres.; Dr. Steve R. Lewis, University of Texas Medical Branch, Galveston, Secy.

Texas Surgical Society, Dallas, April 1-2, 1957. Dr. Truman G. Blocker, Galveston, Pres.; Dr. G. V. Brindley, Jr., Scott and White Clinic, Temple, Secy.

Texas Traumatic Surgical Society, Dallas, April 28, 1957. Dr. J. H. Dorman, Dallas, Pres.; Dr. W. D. Marrs, 306 Broadway, Fort Worth, Secy.

Texas Tuberculosis Association, Fort Worth, April 4-6, 1957. Dr. Howard T. Barkley, Houston, Pres.; Mrs. J. V. Cooper, Waxahachie, Secy.

Texas Urological Society, Dallas, Feb. 3, 1957. Dr. Rex Carter, Austin, Pres.; Dr. J. D. Mitchell, Jr., 3707 Gaston Ave., Dallas, Secy.

United States-Mexico Border Public Health Association, San Antonio, April 9-12, 1957. Dr. Guillermo Soberanes, Hermosillo, Sonora, Mexico, Pres.; Dr. Sidney B. Clark, 243 U. S. Court House, El Paso, Secy.

District

First District Society, Pecos, Feb. 12, 1957. Dr. E. W. Schmidt, Pecos, Pres.; Dr. John Dunn, Pecos, Secy.

Second District Society, Big Spring, 1957. Dr. Clyde Thomas, Jr., Big Spring, Pres.; Dr. Nell W. Sanders, P. O. Box 191, Big Spring, Secy.

Third District Society, Lubbock, March 30, 1957. Dr. A. G. Barsh, Lubbock, Pres.; Dr. William Klingensmith, 708 Monroe St., Amarillo, Secy.

Fourth District Society. Dr. Joe B. Stephens, Bangs, Pres.; Dr. S. H. Martin, 115 S. Park, San Angelo, Secy.

Fifth and Sixth Districts Society. Dr. James C. Sharp, Corpus Christi, Pres.; Dr. Winston E. Riley, 2400 Morgan, Corpus Christi, Secy.

Seventh District Society, Austin, March, 1957. Dr. Leslie C. Colwell, Austin, Pres.; Dr. Robert N. Snider, 2410 Rio Grande, Austin, Secy.

Eighth District Society. Dr. E. Peter Garber, Galveston, Pres.; Dr. John Childers, Univ. of Texas Medical Branch, Galveston, Secy.

Ninth District Society, Navasota, April 3, 1957. Dr. C. Marius Hansen, Navasota, Pres.; Dr. Lyman C. Blair, 1212 Rothwell, Houston, 2, Secy.

Tenth District Society. Dr. Taylor Walker, Beaumont, Pres.; Dr. Alan E. Hubner, 590 Center, Beaumont, Secy.

Eleventh District Society, Jacksonville, Spring, 1957. Dr. M. T. Braswell, Henderson, Pres.; Dr. Hugh F. Rives, Jacksonville, Secy.

Thirteenth District Society. Dr. R. L. Nelson, Wichita Falls, Pres.; Dr. R. D. Moreton, 1217 W. Cannon, Fort Worth, Secy.

Fifteenth District Society, Mount Pleasant, April, 1957. Dr. L. E. Rutledge, Daingerfield, Pres.; Dr. O. R. Taylor, Jr., Linden, Secy.

Clinics

Blackford Memorial Cancer Lectures, Denison, Fall, 1957. Dr. John D. Gleckler, 211 N. Fannin, Denison, Chm.

Dallas Southern Clinical Society, March 18-20, 1957. Dr. Howard C. Coggeshall, Dallas, Pres.; Miss Helga Boyd, Medical Arts Bldg., Dallas 1, Executive Secy.

New Orleans Graduate Medical Assembly, March 11-14, 1957. Dr. Eugene H. Countiss, New Orleans, Pres.; Dr. Maurice E. St. Martin, 626 Maison Blanche Bldg., New Orleans 16, Secy.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls. Dr. Kenneth C. Bebb, 1518 10th, Wichita Falls, Chm.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 28-30, 1957. Dr. Herman Fagin, Oklahoma City, Pres.; Miss Alma F. O'Donnell, 503 Medical Arts Bldg., Oklahoma City 2, Executive Secy.

Postgraduate Medical Assembly of South Texas, Houston, July, 1957. Dr. C. Forrest Jorns, 5644 Lawndale, Houston, Secy.

State Tumor Conference, Wichita Falls, April 3, 1957. Dr. Bailey R. Collins, 925½ Scott, Wichita Falls, Director; Mrs. Chester Robinson, Wichita County Medical Society Tumor Clinic, Wichita Falls, Secy.

Board Examinations

Texas State Board of Examiners in Basic Sciences, next examination, April and October, 1957. Henry B. Hardt, Ph.D., Fort Worth, Pres.; Mrs. Pearl A. Barrera, 407 Perry-Brooks Bldg., Austin, Chief Clerk.

Texas Coordinating Council On Tuberculosis

The Texas Coordinating Council on Tuberculosis adopted its name in September in Austin at which time various aspects of tuberculosis control and the new group's role in relation thereto were discussed. Representatives from the Texas Medical Association, State Department of Public Welfare, State Department of Health, Board for Texas Hospitals and Special Schools, Lone Star State Medical Association, and Texas Tuberculosis Association were present for this second meeting; the first was held in Austin on June 29, 1956.

It was brought out that much work needs to be done in the field of codification of the state's tuberculosis laws, and that the council could act as a clearinghouse for proposed legislation on tuberculosis control to avoid conflict and duplication of efforts by groups involved.

Coordinating councils at the county level also were discussed, and a suggestion was made that county committees which had functioned in the cooperative "Searchlight on TB" project might serve as a nucleus for such groups.

Since one problem in tuberculosis control is that compulsory isolation of patients is difficult, this question was brought up. The quarantine law now in existence gives authority for the retention of infectious tuberculosis patients, but in the past there has been no suitable place where patients legally could be restrained. Other obstacles are poor cooperation on the part of local health officials, and lack of adequate financial aid for the families of tuberculosis patients.

Dr. Ralph E. Gray, Lake Jackson, is chairman of this group; other officers are Dr. Elliott Mendenhall, Medical Arts Building, Dallas, vice-chairman; and Miss Stella McCullough, Board for Texas State Hospitals and Special Schools, 4405 Lamar, Austin, secretary.

Hospital Clinics Alone Are Eligible For SBA "Clinic" Loans

The Small Business Administration has tightened up its definition of "clinic" for loan purposes. Word is being sent to SBA field offices that, to be eligible for government loans, a clinic must be operated in conjunction with and as a part of a proprietary hospital which is run for profit; or, the clinic itself must be a licensed hospital or considered as a hospital by state authorities in those jurisdictions where licensing is not required.

The SBA began receiving applications for loans a few months ago. It is prepared to lend up to $250,000 per borrower with interest at 6 per cent per year for a period of 10 years. Under SBA regulations, any establishment seeking a loan must qualify as a small business operation. Hospitals and nursing homes will be considered small business when the capacity does not exceed 50 beds at the time of application.

Two types of loans are available: direct and participating, the latter jointly with a bank. Applications and information are available from the SBA regional office in Dallas.

Nontherapeutic Sterilization: Criminal Liability

A series of articles dealing with sterilization and artificial insemination was begun in the last issue of the *Journal*. That first article dealt with some of the legal problems connected with sterilization with particular emphasis upon therapeutic and eugenic sterilization. As the most controversial, and from the legal standpoint the most dangerous, area is that dealing with nontherapeutic sterilization, it was believed that this subject should be discussed by itself.

The great disagreement in this field of nontherapeutic sterilization no doubt is brought about, to a large extent, by the moral issues involved. As far as this article is concerned, moral issues will not be discussed, but there are enough problems and dangers from a legal standpoint to make the subject of utmost importance to all physicians.

When one considers the legal problems involved in nontherapeutic sterilization, the subject must be considered from two views: (1) possible civil liability and (2) possible criminal liability. This article will deal solely with the possible criminal liability which might result from nontherapeutic sterilization; the next article will discuss civil liability.

For the most part, there are few cases which have been decided which bear directly upon nontherapeutic sterilization, and in the area of criminal liability, even less. Nevertheless, when one considers the wording of certain statutes which are at present the law within Texas and applies the reasoning set forth by the courts in cases somewhat similar, there emerges a distinct possibility that criminal liability could result from nontherapeutic sterilization. Even though we have had no such case in Texas, there is no assurance that such a case will not arise.

In regard to possible criminal prosecution, and the basis for that possibility, Article 1166 (maiming or mayhem) of the Texas Penal Code should be noted:

> "Whoever shall *wilfully* and *maliciously* cut off or otherwise deprive a person of the hands, arms, finger, toe, foot, leg, nose or ear, or put out an eye, *or in any way deprive a person of any other member of his body*, shall be confined in the penitentiary not less than two nor more than ten years." (Emphasis added.)

Although this penal statute does not specifically mention sterilization, there seems to be a definite possibility that a court in Texas could apply this statute to include nontherapeutic sterilization and hold that the physician performing such sterilization was in violation of Article 1166.

It might be thought that the words used in the quoted statute, "wilfully" and "maliciously," would protect the operating physician from prosecution, but that may well not be the case. As to the words "wilfully" and "maliciously" as used in this statute, it should be noted that from the legal standpoint this does not necessarily mean ill-will or evil intent. Black's Law Dictionary in its definition of "malicious" states (quoting from Pollard v. Phelps):*

> In its broadest sense, it does not necessarily mean ill-will or hatred. In a legal sense, any act done wilfully and purposely to the prejudice and the injury of another which is unlawful is, as against that person, malicious.

And also in regard to the definition of "malicious act":

> a wrongful act intentionally done without legal justification or excuse; an unlawful act done wilfully or purposely to injure another.†

> maliciousness does not necessarily mean actual malice or ill-will but the intentional doing of a wrongful act without legal or social justification.‡

In the Texas case of Ex Parte Taylor,§ the court stated that malice as used in the law does not necessarily involve a vicious and wicked motive but is applied to any wilful transgression of law. (This was a homicide case, but in the case of Key v. State,‖ the court seemed to indicate that the words "wilful" and "malicious" have the same legal meaning in cases of maiming as do the words "malice aforethought" in murder cases.)

Clearly, there is a definite possibility that should a court be called on to decide a case dealing with nontherapeutic sterilization, it might well hold that the requirements of "malicious" and "wilful," as set forth in the statute, have been met.

As to whether a nontherapeutic sterilization actually would be such an act as could be considered as maiming under Article 1166, one should refer to that section of the statute reading "or in any way deprive a person of any other member of his body." This broad statement seems to be sufficient to include sterilization. There seems to be little doubt that a sterilized person has been deprived of a function or use of a part of his body in that the ability to procreate has been denied.

The next question is what effect the consent of the injured party would have upon a criminal prosecution under this statute. This argument could be met easily in that consent to do a criminal act is no defense for committing the act. To give a better example, prosecutions for criminal or nontherapeutic abortions might be mentioned. In those cases, even though the woman has consented to the abortion, it would in no way protect the physician from prosecution for his criminal act.

To the best of my knowledge, there has been only one case in the United States which has dealt with a criminal prosecution for nontherapeutic sterilization. In that case, a complaint was filed against two physicians in California, and they were prosecuted under a maiming penal code similar to that in Texas. In that case, the sterilization had been accomplished by the cutting, tying, or destruction of the fallopian tubes. As this case never reached the appellate courts, we still have no appellate court decision upon this subject, but the mere fact that such a case did reach the trial court level is, in itself, a warning.

From the standpoint of possible criminal prosecution, there is a definite danger in performing any sterilization procedure which is not therapeutic in nature. Although there is no actual authority in Texas today as to what result would be reached in the prosecution of a nontherapeutic sterilization case, there is a definite possibility that a court might hold there has been a violation of Article 1166.

—PHILIP R. OVERTON, LL.B., Austin.

*193 S.E. 102.
†*LaPlante v. Johnson, 297 N.Y.S. 321.*
‡*Dorrington v. Manning, 4 At. (2d) 886—Pa. case.*
§*28 S.W. 957.*
‖*161 S.W. 121.*

Harris County GP's Elect Officers

Dr. Haden E. McKay will serve as president of the Harris County Academy of General Practice during the coming year. New officers elected for 1957 are Dr. Homer A. Taylor, president-elect; Dr. Max M. Diamond, vice-president; Dr. Lawrence E. Carlton, secretary; Dr. Jack D. Gerdes, treasurer; and Dr. Charles W. Klanke, member of the board of directors. All the new officers are from Houston with the exception of Dr. Diamond, who is from Pasadena.

International Medical Assembly

The twenty-first annual meeting of the International Medical Assembly of Southwest Texas will be held in San Antonio January 28-30. Seventeen guest speakers will present the scientific program which will encompass 13 fields of medicine. A complete schedule of entertainment has been planned for both the doctors and their wives, and about 75 technical exhibits will be open.

Guest speakers will be Drs. Dean M. Lierle, Iowa City, ear, nose, and throat; John S. DeTar, Milan, Mich., general practice; Robert B. Greenblatt, Augusta, gynecology; Gordon B. Myers, Detroit; E. E. Wollaeger, Rochester, Minn.; and R. B. Kerr, Vancouver, internal medicine; H. Hudnall Ware, Jr., Richmond, obstetrics; John W. Henderson, Rochester, Minn., ophthalmology; John Caffey, New York, pediatrics; Louis E. Moon, Omaha, proctology; Philip J. Hodes, Philadelphia, radiology; C. B. Morton II, Charlottesville; Cushman D. Haagensen, New York; and Mark M. Ravitch, Baltimore, surgery; C. D. Creevy, Minneapolis, urology; Lt. Col. John P. Stapp, Holloman Air Force Base, military medicine; and Brig. Gen. E. DeCoursey, Brooke Army Medical Center, pathology.

On January 27, the Second Texas District of the American College of Surgeons, the San Antonio Chapter of the Texas Heart Association, and District 5 of the Texas Division, American Cancer Society will hold specialty meetings. There also will be a one day seminar presented by the University of Texas Postgraduate School of Medicine. The following day, the Alamo Chapter of the American Medical Woman's Association will have a dinner meeting.

On Monday, January 28, doctors and their wives may gather for refreshments and a friendship party in the evening at the San Antonio Country Club. A brunch and style show has been planned for the ladies' entertainment Tuesday, and that night an informal (no ties allowed) frontier casino and buffet supper will provide fun for all. Golfers may participate in a tournament Wednesday, and there will be a cocktail buffet for all physicians.

The registration fee is $20, and the meeting is open to all physicians. Checks may be mailed to 202 West French Place, San Antonio 12.

CANCER SEMINAR IN ARIZONA

The Arizona Division, American Cancer Society, will sponsor a cancer seminar January 10-12 in Phoenix. The agenda includes sessions on bone tumors, mediastinal tumors, ovarian tumors, relationship of animal tumors to human tumors, chemotherapy of malignant diseases, cytologic diagnosis of cancer of the cervix, isotopes in cancer diagnosis and therapy, and a clinical pathological seminar on the stomach. This meeting is open to all physicians, and credit for attendance will be given by the American Academy of General Practice.

New Orleans Graduate Medical Assembly

Eighteen outstanding guest speakers will participate in the twentieth annual meeting of the New Orleans Graduate Medical Assembly March 11-14, and their topics will be pertinent to both specialists and general practitioners.

The program will include 54 discussions on many topics of current medical interest in addition to clinicopathologic conferences, symposiums, scientific exhibits, medical motion pictures, round-table luncheons, and technical exhibits.

A postclinical tour of the Mediterranean and Europe will be held, and arrangements have been made for medical programs in the places visited. Details of the meeting and tour are available from the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12.

Psychiatry and Neurology Institute

The ninth annual Institute of Psychiatry and Neurology will be held in Little Rock February 28-March 1. Participants will include Dr. Francis J. Braceland, Hartford; Dr. Esther Lucile Brown, Boston; Dr. Donald A. Covalt, New York; Dr. Iago Galdston, New York; Dr. William E. Gordon, St. Louis; Dr. E. Lowell Kelly, Ann Arbor; Dr. Louis A. Krause, Baltimore; Dr. L. H. McDaniel, Tyronza, Ark.; Dr. William S. Middleton, Washington, D. C.; Dr. Earl G. Planty, Urbana, Ill.; Winthrop Rockefeller, Little Rock; Dr. Lewis R. Wolberg, New York; and Dr. Harold G. Wolff, New York.

All physicians will be welcome to attend, and there will be no registration fee.

Postgraduate Courses

Radiological Safety, New York, January 7-18.—This full time course will be offered by the Institute of Industrial Medicine of New York University Post-Graduate Medical School. It is designed for industrial physicians, industrial hygiene engineers, public health officials, and persons in industrial and university research laboratories who are responsible for radiological safety. Further information may be had from the Dean, 550 First Avenue, New York 16.

Diseases of the Chest, Nashville, San Francisco, and Philadelphia, January-April, 1957.—The American College of Chest Physicians will present courses on diseases of the chest January 14-18 in Nashville, February 25-March 1 in San Francisco, and April 1-5 in Philadelphia. Tuition is $75, and the most recent advances in diagnosis and treatment, both medical and surgical, will be presented. The Executive Director, 112 East Chestnut, Chicago 11, can provide details.

Psychiatry in Occupational Health, Cincinnati, March 11-15.—The objective of this course is to give physicians more understanding of the prevention of emotional and psychosomatic disorders in the occupational setting. Problems such as absenteeism, accidents, alcoholism, disability, emotional aspects of occupational dermatoses, and industrial intoxications will be included. Application blanks are available from the Secretary, Institute of Industrial Health, Kettering Laboratory, Eden and Bethesda Avenues, Cincinnati 19.

Surgery in Acute Trauma, San Antonio, May 6-8; El Paso, April 1-3.—These courses are designed for all physicians who are called upon to treat traumatic injuries, and for all those with civil defense responsibilities. They are open to both military and civilian doctors, and applications may be made to the commanders of Brooke Army Hospital and William Beaumont Army Hospital respectively.

New York University Post-Graduate Medical School Courses.—More than 100 postgraduate courses, designed for specialists and nonspecialists alike, are offered each year. In January, there will be courses of interest to general practitioners as well as many specialists. Topics include dermatology and syphilology, pediatrics, heart disease, clinical internal medicine, anesthesiology, peripheral nerve injuries, anatomy for orthopedic surgeons, culdoscopy, neuro-ophthalmology, basic urology, cancer therapy, fractures and dislocations, endaural surgery, and laryngology and surgery of the larynx and neck. The Dean, NYU Post-Graduate Medical School, 550 First Avenue, New York 16, can answer inquiries.

Personals

Dr. Oscar Creech, Jr., has been named professor of surgery and chairman of the department of surgery at Tulane University School of Medicine, New Orleans, to succeed Dr. Alton Ochsner, who retired in July. Dr. Creech formerly was associate professor of surgery at Baylor University College of Medicine, Houston.

Mrs. T. A. Watkins, Harlingen, celebrated her one hundredth birthday early in November. She is the mother of *Dr. John C. Watkins*, Harlingen, who, at the age of 80, is still in active practice there.

Drs. Jack H. Kamholz, David D. Reisman, and *Herman I. Kantor*, all of Dallas, jointly presented a paper at the fifth annual meeting of the American College of Obstetricians and Gynecologists in Chicago early in November.

Dr. Ozro T. Woods, a Dallas mental health consultant, took part in a symposium on mental health needs in civil defense and disaster planning during the County Medical Societies Civil Defense Organization's seventh conference in Chicago in November.

Dr. Ralph Hanna, Austin, has been named chairman of United Cerebral Palsy of Texas.

Dr. Truman G. Blocker, Galveston, is vice-president of the American Association of Surgical Trauma. He was elected at the recent meeting of that group in Santa Barbara, Calif.

Dr. George R. Herrmann, Dr. Milton Hejtmancik, and *Dr. E. Peter Garber*, all of Galveston, attended the fifth annual International Cardiology Congress in Havana in November, and Dr. Hejtmancik participated in the program.

Dr. Edmond K. Doak, Houston, has been reappointed governor for Texas of the American Diabetes Association.

New parents of boys are *Dr. and Mrs. E. Peter Garber*, September 21, Galveston; *Dr. and Mrs. James C. Thompson*, September 21, El Campo; *Drs. Virgil and Marjorie Lawlis*, September, Galveston; *Dr. and Mrs. Cornelius H. Nau*, San Antonio; and *Dr. and Mrs. D. G. McNamara*, Houston.

Girls were born to *Dr. and Mrs. Denton Cooley* and *Dr. and Mrs. Eugene Ellingson*, both couples of Houston.

MEDICAL ASSISTANTS ORGANIZE

Doctors' office aides now have a new national organization of their own: the American Association of Medical Assistants. This group was organized officially at a meeting in Milwaukee late in October, which was attended by 250 medical assistants representing 16 states.

Membership is open to anyone who works under a physician's supervision and who is an active member of a state medical assistants group. The objectives of the organization parallel those of the medical profession, and a six-member advisory committee of physicians will work with the association. Its by-laws expressly forbid its becoming a labor union or bargaining group of any kind.

University of Texas Medical Branch

Dr. Clarence S. Livingood, former professor of dermatology and syphilology at the University of Texas Medical Branch, now chairman of the dermatology division, Ford Hospital, Detroit, gave a special lecture in Galveston in September. Other distinguished visitors on the campus have been Dr. D. Brachetto-Brian, professor of pathology and former director of the Institute of Cancer Research, University of Buenos Aires; Dr. E. Tonutti, professor of anatomy and director of the Anatomical Institute, University of Giessen, Germany; and Dr. William H. Sweet, associate clinical professor of surgery, Harvard Medical School.

Dr. Arnold H. Nevis, formerly of the Massachusetts Institute of Technology, has joined the faculty as assistant professor of physiology. He also is director of the Muscular Dystrophy Research Foundation.

Dr. Bethea Resigns

Dr. James A. Bethea, executive director of the state hospital system since June, 1953, has resigned effective June 1, 1957. He and Mrs. Bethea will live in San Antonio in their suburban home. He will have reached the statutory retirement age for state employees next October, and prior to accepting the hospital position he had retired from the Army medical services as a major general.

Dr. Raleigh R. Ross, Austin, has been elected chairman of the Board for Texas State Hospitals and Special Schools. He succeeds Durwood Manford of Smiley. Other members of the Board are Dr. James H. Wooten, vice-chairman, Columbus; Mrs. Howard E. Butt, Corpus Christi; R. F. Higgs, Stephenville; Herbert Martin, D. D. S., Mexia; John G. Dudley, Houston; James M. Windham, Livingston; and Howard Tellepsen, Houston.

Tol Terrell Elected to AHA Post

B. Tol Terrell, administrator of Shannon West Texas Memorial Hospital, San Angelo, was chosen president-elect of the American Hospital Association during its annual meeting in September.

Gamma Ray Source Available For Research and Development

The Atomic Energy Commission has available a limited supply of spent fuel elements from its Materials Testing Reactor for rental to licensees as sources of gamma radiation. Priority will be given to requests for elements for research and development activities including pilot plant testing. A flat charge of $100 a year, or fraction of a year, plus handling and transportation costs, will be made for the use of each fuel element. Those desiring additional information may write to the Director, Division of Civilian Application, United States Atomic Energy Commission, 1901 Constitution Avenue, N. W., Washington 25.

FIRST AID BOOK OFFERED

A pocket-sized, 256-page booklet entitled "Home Health Emergencies" is available without charge on individual request to the Medical Department of the Equitable Life Assurance Society of the United States, 393 Seventh Avenue, New York 1. Developed from material prepared by Dr. Granville W. Larimore, the volume presents principles of home nursing and information on first aid. It emphasizes the need for home nurses to seek the guidance of a physician.

A leaflet based on the book and giving fundamental first aid rules, together with a space for important telephone numbers and a coupon for use in requesting a family copy of "Home Health Emergencies," is available in bulk for distribution by private practitioners, medical institutions, and health organizations and agencies.

Southern Medical Association Celebrates Golden Anniversary

Texans took extensive honors throughout the recent golden anniversary session of the Southern Medical Association in Washington, D. C. Dr. Curtice Rosser, Dallas, former president of SMA and a leader both in state and national medical affairs, was presented the association's first Distinguished Service Award for his contributions to the advancement of medicine, and received a gold medal in token of this honor. This award was established at the convention last year, and nominations were open among the more than 10,000 SMA members in 17 states. Dr. Rosser was chosen for his pioneering efforts which led to the recognition of proctology as a medical specialty, and for progress in that field.

First place in the scientific exhibit awards went to Drs. Nicholas C. Hightower, Jr.; A. C. Broders, Jr.; R. D. Haines; J. F. McKenney; and A. W. Sommer, Temple, for their exhibit, "Chronic Ulcerative Colitis: Diagnostic and Therapeutic Considerations." Texans who received honorable mention for their exhibit, "A Chromatographic Analysis of the Excretory Products of a Mercurial Diuretic," were Drs. Carroll A. Handley, John H. Moyer, and Richard A. Seibert, Houston. Eight other groups of Texans participated in the scientific exhibit, and Texas doctors accounted for 34 presentations or discussions during the scientific program.

Although the November meeting of the Southern Medical Association was designated as its golden anniversary meeting, the group's 50 year birthday party was held October 2-3 at the Read House, Chattanooga, Tenn., the dates and place where the organization was born in 1906. In attendance were seven physicians who took part in the organizational meeting. Dr. Milford O. Rouse, Dallas, President of the Texas Medical Association, served as a member of the honorary advisory celebration committee. He also was elected vice-president of SMA at its golden anniversary meeting.

Other officers elected were Drs. W. Kelly West, Oklahoma City, president-elect; Dr. Oscar B. Hunter, Jr., Washington, D. C., second vice-president; Dr. A. Clayton McCarthy, Louisville, chairman of the council; Dr. Fount Richardson, Fayetteville, vice-chairman of the council; and Dr. Harry Lee Claud, Washington, member of the executive committee of the council. Dr. J. P. Culpepper, Jr., Hattiesburg, Miss., was installed as president.

Mrs. O. W. Robinson, Paris, was installed as president of the Woman's Auxiliary.

For the first time, nine medical schools were invited to send a student representative to the meeting as guests of SMA. These students visited the various portions of the Southern Medical Association's program, and were honored at several functions.

The next meeting will be in Miami Beach, Fla., November 11-14, 1957.

New Director Named For Occupational Health Division

Dr. William L. Wilson, a native of McGregor, has been named director of the State Health Department's newly formed Division of Occupational Health in Austin. The division was created to acquaint the people with the needs of a strong occupational health program and to promote good public health practices in industry. The objectives will be carried out by working through local health departments and professional groups.

U. S. Spends $15.17 Annually For Each Citizen's Health

In analyzing the federal medical budget for the current year, the American Medical Association's Washington office found that the government is spending an average of $15.17 per man, woman, and child for care in the health field alone. If only wage-earners are considered, they will be paying an average of $32.72 each to finance the government's health-medical operations, and the average family will be paying $54.61 for the same services this year. The total expenditures for health is a billion dollars more than the cost of running the Department of Commerce, half a billion more than all Department of Agriculture expenses, and six times the Department of the Interior's budget. For the first time since World War II, medical costs of the Veterans Administration top the list, passing the Defense Department. A close third is the Department of Health, Education, and Welfare.

Physicians Take Part in Pharmacy Course

Three Austin physicians, Drs. Walter Donald Roberts, Lang F. Holland, and Sam J. Hoerster, Jr., were lecturers at the University of Texas' fifth annual pharmacy refresher course late in November. Main topics of the course were recent developments in tranquilizing drugs, insulin therapy, and cancer research.

Doctors Can Help Expand Health Insurance

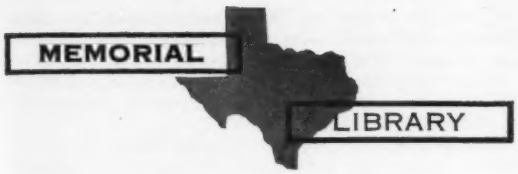
Doctors and hospital administrators must encourage voluntary health insurance companies to expand and improve their coverage if medical progress is to continue, the American Hospital Association was told by Mr. George Bugbee, New York, president of the Health Information Foundation. He was speaking at the association's recent annual meeting.

Mr. Bugbee pointed out that among families who incur medical bills of more than $500 a year, voluntary insurance covers, on the average, only 25 per cent of the costs. No provisions are made to cover home and office medical care, fees to physicians for office visits, cost of drugs, appliances, and other related expenses, and dental care. He emphasized that expansion of voluntary health insurance is a job for private enterprise, and not for the federal government.

DOCTORS' HEALTH

Doctors who insist that their patients follow basic rules for good health often are guilty of breaking every rule themselves, as shown in a recent survey by *Medical Economics*. Seven out of 10 physicians admit that they expect their patients to do as they say, not as they do. Three-fourths of physicians do not get enough sleep. Four-fifths of the doctors polled admitted that they ate too hurriedly, too irregularly, too little, or too much, and 18 per cent said their diets were not well balanced. In regard to diseases of stress, 11 per cent of those questioned have, or have had, ulcers; 5 per cent have symptoms of hypertension; 4 per cent have a coronary artery disease; and 24 per cent say that they are "always tired."

Less than half of the doctors have a family physician, and only one respondent said that he had a regular physical checkup. Three out of five doctors believe that their health has been affected by constant strain.



Rare Books Acquired By Memorial Library

Two rare books which will be accepted formally for the Memorial Library of the Texas Medical Association in ceremonies January 26 in Austin will mark the acquisition of the Library's twenty-five thousandth volume, the line dividing small from large medical collections. "De Re Medica" of Cornelius Celsus, dated 1528 and 1529, is being presented by friends of the late Dr. Sam E. Thompson of Kerrville, and a first edition of "Experiments and Observations on the Gastric Juice, and the Physiology of Digestion" by William Beaumont, dated 1833, is being given in tribute to the late Dr. Sam N. Key of Austin. Following are reviews of these books:

De Re Medica

CORNELIUS CELSUS. *1528-1529.*

It is doubtful that there is another copy of this early medical compendium in the United States today. The book bears dates of 1528 and 1529, and when it is remembered that books printed with movable type were first published about 1450, the antiquity of these medical observations is appreciated. As was mentioned, the book is a compendium of ancient medical authors which was copied from manuscripts that had been handed down from the ancients through the middle ages. The title page announced the "De Re Medica" of Cornelius Celsus, and has a nice woodcut border depicting Cleopatra committing suicide with a snake and a picture of Dionysus in one of the lateral margins. There are many cherubs and a small inset stamp of Julius Caesar in other parts of the border. Contemporary marginal notes in a legible hand are written throughout the book. Following the index to the Celsus is a copy of the Pagan Oath of Hippocrates which, bearing the 1528-1529 dateline, is one of the earliest printed oaths in Latin that we have. Following this are the eight books of the Celsus "De Re Medica," which is generally agreed to be the first printed textbook of medicine (the 1478 edition).

The pharmacology of Scribonius Largus, which has several distinctions, follows the Celsus. This was written about 45 A. D., and the preface mentions that a Greek by the name of Hippocrates had an oath (Iusiurandum) which he required his students to take. This is the earliest reference to the Hippocratic Oath which we have at the present time. (The earliest manuscript of the oath dates to the thirteenth century). The work of Scribonius Largus contains 271 formulas, insists upon the importance of diet, and follows therapeutic indications from head to foot as was a popular custom in those days. Some of his remedies, such as a piece from the liver of a dead gladiator, are foolish, yet, in the main, his work is rational and is a valuable collection of prescriptions. He was the first to mention opium as an extract. For headache, among other remedies, he advised "a living black torpedo (ray fish) be placed on the spot where pain is present until the pain ceases and this place is benumbed. As soon as sensation returns the remedy is removed." This is perhaps the first application of electricity in medicine. His formulary was popular and authoritative for hundreds of years.

The next portion of the book is written by Vindicianus, friend, patron, and convert of St. Augustine. This is a book of remedies in the form of a poem written about 375 A. D.

Following Vindicianus is Claudius Galen's "De Plenitudine" written about 170 A. D. Claudius Galen of Pergamon, Asia Minor, represents one of the peaks in the periods of medical history. "The proof of correct treatment is based on two criteria," says Galen, "reason and experience." The book by Galen also is interesting because it is "interpreted" with annotations by Gunther of Andernach, the great sixteenth century Parisian teacher of both Andreas Vesalius and Michael Servitus (Villanovus).

The next portion of the book is written by Polybus, the son-in-law of Hippocrates. This is a chapter on diet entitled "De Salubri Victus Ratione." Polybus also is noted for his observations on incubated chick eggs and for his description of early human embryo. Polybus lived about 380 B. C.

Then follows the famous "Herbarium" by Lucius Apuleius, which was copied mainly from Dioscorides' "Materia Medica" written about 400 A. D. The latter part of this portion of the book is interesting because it deals with the giving of herbs according to the signs of the zodiac. This still is adhered to in some parts of the world.

The last portion of this volume contains the much neglected but great work of Antonio Benivieni, "De abditis nonnullis ac mirandis morborum et sanationum causis" (concerning some hidden and remarkable causes of diseases and cures). This was the first book published on pathological anatomy. Benivieni was born in 1443 in Florence; studied medicine at Florence, Pisa, and Siena; spent his professional life in Florence; had as contemporaries Leonardo da Vinci and Savonarola, whose physician he was; and died in 1502. His brother, Girolame, published in 1507 the "De abditis," which contained the clinical notes and observations of 111 autopsies.

"De abditis" begins with a description of "the disease which is commonly called French. A new kind of disease in the year of Grace 1496 spread not only over Italy but throughout Europe as well. This disease, beginning in Spain, then scattered throughout other countries of Europe, attacked an infinite number of people." Benivieni described the case of a woman with "ulcerations of the vagina that gave birth to a baby with the French disease." This probably is the earliest record of transmission of syphilis from mother to the fetus. In this work he also describes gallstones, carcinoma of the stomach, fibrinous pericarditis, syphilitic peristitis, and vesical calculus among many other conditions. Sir William Osler said of this work, "The special interest of the work is that here, for the first time in modern literature, we have reports of postmortem examinations made specifically with a view of finding out the exact cause of death." Benivieni was certainly a great medical pioneer who blazed a path followed 172 years later by Bonetus in his "Sepulchretum" (1679) and 254 years later by Morgagni in his monumental "Desedibus" (1761). A recent translation of Benivieni's "De abditis" by the great London medical historian Dr. Charles Singer was published by Charles C Thomas in 1954.

From this abbreviated summary it will be seen that this famous book literally has the cradle of medicine in its covers. Because of its value, the book cannot be sent out of the Library at Austin; however, medical students, bibliophiles, Latin scholars, and medical historians who visit the Library will find the book a valuable asset.

—DR. WILLIAM M. CRAWFORD, Fort Worth.

Experiments and Observations on the Gastric Juice and the Physiology of Digestion

WILLIAM BEAUMONT, M. D., *Surgeon in the United States Army. Plattsburgh, F. P. Allen, 1833.*

This work was the first exhaustive treatise on the physiology of digestion, which is described under the following heads: (1) Of Aliment, (2) Of Hunger and Thirst, (3) Of Satisfaction and Satiety, (4) Of Mastication, Insalivation and Deglutition, (5) Of Digestion by the Gastric Juice, (6) Of the Appearance of the Villous Coat, and of the Motions of the Stomach, and (7) Of Chylification, and Uses of the Bile and Pancreatic Juice.

To appreciate the work one must know something of the author and the circumstances. William Beaumont was born at Lebanon, Conn., November 21, 1785. Practically nothing is known of his boyhood. In 1807 he arrived in Champlain and began his study of medicine, teaching school and tending store to support himself. In 1808, he apprenticed himself to Dr. Benjamine Chandler of St. Albans, Vt. He was licensed to practice medicine by the "Third Medical Society of the State of Vermont, as established by law," in 1812.

War with England had been declared June 18, 1812, and Beaumont went to Plattsburgh and presented his credentials to the authorities; thus, he began his long and colorful career as an Army surgeon.

Beaumont's meeting with Alexis St. Martin, the subject of his experiments, took place June 6, 1822, when the retail store of the American Fur Company was crowded with Indians and voyageurs who were busy trading when a gun accidentally was discharged with St. Martin the victim. Beaumont describes the opening in the stomach as being as large as a man's fist. This cavity did not heal although Beaumont wished to freshen the edges and close the opening with sutures. St. Martin would not consent to the operation. The experiments were conducted by introducing food into the stomach through this orifice. Studies were made on various types of food, and digestion took place when the patient was in various states of anger, impatience, and fever. These experiments were the bases of modern gastric physiology. It has been said that the opening was intentionally kept so, but authorities have proven this to be false. Beaumont supported St. Martin for several years on his salary of $40 per month.

In 1833, Beaumont decided to have his experiments published, and on July 29, he filed the title of his book with the clerk of the Southern District of New York. It was decided to sell the book for $3, but the records show that it was sold for only $2.

Beaumont died in St. Louis April 23, 1853. Alexis St. Martin, after deserting the care of Dr. Beaumont in 1834, died June 24, 1880, in Montreal. Sir William Osler, who lived in Montreal at the time, took active measures to secure a necropsy, or at least the stomach, but was unsuccessful. The family resisted all requests; allowed the body to decompose, and had a grave dug 8 feet below the surface to prevent any attempt at resurrection.

NEW BOOKS

Burks, James W.: *Wire Brush Surgery,* Springfield, Ill., Charles C Thomas, 1956.

Ciba Foundation Symposium: *Bone Structure and Metabolism,* Boston, Little, Brown & Company, 1956.

Ciba Foundation Symposium: *Paper Electrophoresis,* Boston, Little, Brown & Company, 1956.

Cozen, Lewis; Brockway, Alvia; and McMaster, Paul E.: *Operative Orthopedic Clinics,* Philadelphia, J. B. Lippincott Company, 1955.

DeLorimier, Alfred A.; Moehring, Henry C.; and Hannan, John R.: *Clinical Roentgenology,* vol. 4, Springfield, Ill., Charles C Thomas, 1956.

DeSanctis, A. G., and Varga, Charles: *Handbook of Pediatric Medical Emergencies,* ed. 2, St. Louis, C. V. Mosby Company, 1956.

Dragstedt, Carl A.: *Personal Health Record,* Harrisburg, Pa., Military Service Publishing Company, 1956.

Farris, Edmond J.: *Human Ovulation and Fertility,* Philadelphia, J. B. Lippincott, Company, 1956.

Hoerr, Normand L., and Osol, Arthur: *Blakiston's New Gould Medical Dictionary,* ed. 2, New York, Blakiston, 1956.

Horsfall, William R.: *Mosquitoes, Their Bionomics and Relation to Disease,* New York, Ronald Press Company, 1955.

Josiah Macy, Jr., Foundation: *A Review of Activities (1930-1955),* New York, 1955.

Kerr, Donald, and Brunnstrom, Signe: *Training of the Lower Extremity Amputee,* Springfield, Ill., Charles C Thomas, 1956.

Lipman, Bernard S., and Massie, Edward: *Clinical Unipolar Electrocardiography,* ed. 3, Chicago, Year Book Publishers, 1956.

McClellan, Walter S.: *Physical Medicine and Rehabilitation for the Aged,* Springfield, Ill., Charles C Thomas, 1956.

Merck Manual, ed. 9, Rahway, N. Y., Merck & Company, 1956.

Mohs, Frederic E.: *Chemosurgery in Cancer, Gangrene and Infections,* Springfield, Ill., Charles C Thomas, 1956.

Nixon, Pat Ireland: *The Early Nixons of Texas,* El Paso, Carl Hertzog, 1956.

Oliven, John F.: *Sexual Hygiene and Pathology,* Philadelphia, J. B. Lippincott Company, 1955.

Osborne, Stafford L.: *Diathermy,* Springfield, Ill., Charles C Thomas, 1950.

Schiff, Leon: *Diseases of the Liver,* Philadelphia, J. B. Lippincott Company, 1956.

Thorek, Philip: *Anatomy in Surgery,* Philadelphia, J. B. Lippincott Company, 1951.

Thorek, Philip: *Surgical Diagnosis,* Philadelphia, J. B. Lippincott Company, 1956.

Transactions of the Southern Surgical Association, 1955, vol. 67, Philadelphia, J. B. Lippincott, 1956.

U. S. Naval Dental School: *Color Atlas of Oral Pathology,* Philadelphia, J. B. Lippincott, 1956.

Who's Who in the South and Southwest, Chicago, A. N. Marquis Company, 1956.

Year Book of Pediatrics, 1956-1957, Chicago, Year Book Publishers, 1956.

GIFTS TO THE LIBRARY

Dr. L. G. Burton, Woodville, 35 books, 5 bound journals, 23 unbound journals.

Dr. Elizabeth Gentry, Austin, 1 book.

Dr. J. Edward Johnson, Austin, 80 journals, 12 books, 6 reprints.

Dr. S. N. Key, Jr., Austin, 30 books.

Dr. H. L. Klotz, Austin, 115 journals.

Dr. Pat Ireland Nixon and Dr. Pat Ireland Nixon, Jr., San Antonio, 1 book.

Dr. Charles F. Pelphrey, Austin, 1 rare book.

Dr. Joe C. Rude, Austin, 1 book.

Dr. Nelson L. Schiller, Austin, 58 journals, reprints.

Dr. Oliver W. Suehs, Austin, 28 journals.

Dr. Samuel P. Todaro, Austin, 1 book, 1 journal.

NEW TAPE RECORDINGS

The William S. Merrell Company, Cincinnati, presented the Library with tape recordings of two speeches given at the Merrell Symposium on "Constructive Medicine in Aging," January 13, 1956. The speeches are "Concept of Constructive Medicine," by Dr. Edward J. Stieglitz, Washington, D. C., and "Consequences of Anxiety: Emotions and the Heart," by Dr. Edward Weiss.

★ Motion Pictures

The Invader

16 mm., sound, black and white, 37 min.

Telling the story of man's efforts since the fifteenth century to cope with the baffling and dismaying problem of syphilis, the film shows the step-by-step development of medical knowledge and the changes in public attitudes toward the disease. Without "scare technique," the facts of the syphilis problem are clearly presented.

CANCER FILMS AVAILABLE

The Management of Advanced Cancer

16 mm., sound, color, 46 min.

This film covers such topics as nutrition, electrolyte disturbance, the proper management of pain by drugs and—when necessary—by neurosurgical procedures, the indications for palliative radiotherapy, and the psychological factors presented by terminal cancer. Community services available to the physician to aid in the care of these patients are described.

Moles and Melanomas

16 mm., sound, color, 49 min.

This film affords the audience a complete review of the many problems involved in the diagnosis and treatment of moles and melanomas. Some of the topics of discussion are the incidence and regional distribution of moles and melanomas, the influence of complexion on the character and behavior of moles, the hormonal relationships of moles and melanomas, the treatment of melanomas, including the monobloc operation and the indications for amputation, and considerable data on end results of treatment related to site of origin, state of disease, age, sex, and the relationship between immediate and delayed diagnosis and treatment.

Tumors of Bone

16 mm., sound, color, 49 min.

Opening with a classification of primary malignant tumors of bone and a consideration of metastatic cancer involving the skeletal system, this film goes on to explain the importance of early diagnosis and the steps by which such diagnosis is achieved. To illustrate the foregoing, case histories of actual patients are presented with an account of their treatment.

Tumors of Childhood

16 mm., sound, color, 44 min.

This film reports on methods for eliciting the differential diagnosis and determining the management of tumors. Clinical case histories and patients are presented. The findings of physical examination, the role of biopsy, laboratory procedures, and the significance of roentgenographic studies are demonstrated. Examples of management by surgery, radiotherapy, and chemotherapy are presented.

★ Books

Preventive Medicine in World War II, Vol. 3: Personal Health Measures and Immunization

COL. JOHN BOYD COATES, JR., M.C., *Editor in Chief;* EBBE CURTIS HOFF, Ph. D., M. D., *Editor for Preventive Medicine; and* PHEBE M. HOFF, M. A., *Assistant Editor. 394 pages. Washington, D. C., Office of the Surgeon General, Department of the Army, 1955.*

With an advisory board on the history of preventive medicine headed by Stanhope Bayne-Jones and nine others of like experience this book accomplishes the purpose for which it was written. Specifically, it tells troops and civilians alike how to take the proper measures to insure the health not only of themselves but also of those around them. It begins with manpower selection, including mental and physical as well as psychiatric standards. Those who have acute or chronic infectious diseases which make them either undesirable or hazardous to the service are eliminated. Tuberculosis, venereal disease, and psychiatric causes for rejection are given discussion space. The physical profile serial system for general and limited service, as well as standards for special categories, receives its merited attention.

General hygiene and sanitation in bivouac, maneuver, and battle areas merits the space given it. In this section care of the feet, bathing, laundry facilities, water discipline, louse control, and personal supplies share in the discussion. The problems encountered in specific areas such as the Middle East, Europe, Southwest Pacific, and China-Burma-India have received attention to their special situations requiring health control measures.

Nutrition is discussed not only from a ration standpoint, but also in its relation to the type of activity. Consideration is given to the type of foods available in various theaters of operation. The differences in messing troops other than our own presents special problems of likes and dislikes; for example, Mohammedans may wish goat meat in lieu of pork.

The section on preventive psychiatry is undoubtedly important and will receive increasing attention in the future not only from medical personnel, but from all officers responsible for the care of troops or other personnel. The reviewer will leave remarks on this aspect to others who are better qualified to discuss it.

The importance of immunization is indicated by the 90 pages devoted to it. Included, of course, are the familiar ones such as typhoid, diphtheria, tetanus, smallpox, and, according to the geographic location, yellow fever, cholera, plague, and typhus. Other developments included relate to influenza, Japanese B. encephalitis, Rocky Mountain spotted fever, measles, viral hepatitis, gas gangrene, and scarlet fever. The establishment of definite organized schedules of immunization for the various diseases plus any variables in the interval of times according to the geographic location will be invaluable information guides for our medical officers in far flung bases throughout the world, and it should be of considerable value to our citizens as we become a trading and maritime people.

—Joe C. Rude, M. D., Austin.

Surgery in World War II, Hand Surgery

STERLING BUNNELL, M. D. *447 pages. Washington, D. C., Office of the Surgeon General, Department of the Army, 1955.*

One only needs to note the advisory editorial board, with Michael De Bakey as its acting chairman, to realize that this volume on hand surgery is a unique publication, replete with pertinent illustrations of hand injuries and their many complications.

This volume is important because it analyzes the injuries as to type, frequency, prevention, treatment, and surgical repair when necessary. It emphasizes the importance of channeling these injuries to centers where a maximum of facilities and personnel are located for expeditious handling of tendon repair, plastic repair, or nerve repair. The historical development of the centers for rapid indoctrination in the handling of hand injuries is described. After handling numerous hand injuries, the physicians trained in the centers realize the profit and value they received from the instructions given there. The function and importance of civilian consultants is emphasized, and anyone who has had service in a foreign theater well knows that a theater consultant could accomplish many things in a professional way that would have taken longer by regular channels.

The manner of early handling of hand injuries so as to retain mobility and the prehensile function, prevent stiffening, retain tactility, and properly care for burns is given proper attention. The proper handling of the muscles during critical periods, the indications for and the proper usage of splints, and the various means of rehabilitation are discussed.

The many and varied types of operative procedures required in war time injuries are well illustrated. Attention is given to the methods of treating lacerations and fractures, tendon repair, nerve repair, indications for amputations, initial and elective surgery, physical therapy that is indicated, and the psychologic and psychiatric aspects of severe hand injuries.

This book is one that will serve the armed services well in the future. For any physician in civilian life who handles hand injuries, this volume can be read with a great deal of profit.

—Joe C. Rude, M. D., Austin.

Medical Support of the Army Air Forces in World War II

MAE MILLS LINK *and* HUBERT A. COLEMAN. *1027 pages. $7. Washington, D. C., Office of the Surgeon General, USAF, 1955.*

This book covers a vast amount of educational, historical, and practical information on the adaptability and flexibility necessary in men, material, and work to keep up with the ever changing picture of the duties of medical officers serving in the Air Force. The duties of each vary with the mission or objective of that particular endeavor and some idea is gained of the variations necessary in staffing. This volume is the first in my experience to give the credit due to the early founders of aviation medicine and to place in proper perspective the contributors to its advancement.

The progress of Air Force medicine during World War II is an absorbing, interesting, and lively account depicting the human side of the struggles to attain it. The important roles played by the School of Aviation Medicine and by Research and Development are well portrayed, and reading the book develops in one a much better understanding and appreciation of the tremendous impact they had on the war effort as a whole. The air evacuation mission and the actual functioning of the medical service in the field are well presented. The fine thing about this volume is that it fills in gaps in one's information, thus enabling him to grasp more fully the actual scheme of operating conditions within each theater. The effect of climate alone immediately presents a multitude of problems from one command to another. In the Pacific Theater a serious problem from a health standpoint is presented by the native population together with the contaminated soil and vegetables in most localities. There is a necessity for continuous education of the troops and civilian population alike, and the reader appreciates the herculean magnitude of the problems presented for solution. One marvels that we fared as well as we did.

The meticulous care with which the Air Force medical service is analyzed throughout the war years is enlightening. Between the lines one sees an exhaustive use of voluminous information dissected and analyzed with the help of personnel who lived through this era. It is for this reason that the ruggedness of gigantic efforts and the spirit of the times are so colorfully described.

The classification of diseases and their discussion in relation to the various theaters is of much value. It is recommended reading for any officer upon entering the medical service of the Air Force; it will give him fundamental information and a background to appreciate the service of which he is to become an integral part. Likewise, the analysis of wound types and different ways in which casualties occur, whether from wounds or disease, is food for thought. The younger officers entering service should realize the serious responsibility for which they prepare, for it will be an immeasurably greater one than any of us have faced.

One must pay tribute to Drs. Link and Coleman, the Surgeons General of the Air Force, and the many contributors who have so enriched our appreciation and understanding of this arm of the service.

—Joe C. Rude, M. D., Austin.

Diseases of the Chest

H. CORWIN HINSHAW, M. D., Ph.D., *Clinical Professor of Medicine, Stanford University School of Medicine, and* L. HENRY GARLAND, M. B., B. Ch., *Clinical Professor of Radiology, Stanford University School of Medicine. 727 pages, 634 illustrations. $15. Philadelphia, W. B. Saunders Company, 1956.*

This book has been written on the basis of everyday, practical experience and observations of the authors, with special problems dealt with by specialists in other fields in three of the chapters.

The subject of diseases of the chest is covered thoroughly, commencing with the patients' complaints and continuing to the detailed physical findings and special technical procedures. A detailed outline at the beginning of each chapter gives this book a great deal of value as a reference volume. The authors have organized the approach to the multitude of chest disorders in a concise manner, and have been able to cover the subject thoroughly with the conspicuous absence of superfluous explanations. The author assumes the reader has an essential and primary knowledge of the subject, yet the volume is read and assimilated quite easily.

This book is complete and timely in the approach to the subject of therapy of infections of pulmonary and cardiac origin. The roentgenographic reproductions are excellent and adequately illustrate the essential points of cases under discussion. Included are techniques of proper radiography and a chapter on segmental anatomy of the respiratory tract and thoracic contents. Also included are chapters on foreign bodies in the respiratory system, thoracic injuries, and the usual conditions which every physician sees in his practice.

It is my conclusion that this book can be well recommended as essential study to general practitioners and internists alike.

—R. L. Kleeberger, M. D., Spearman.

★ **Texas Medical Association**

Disability Insurance Plan Reaffirmed as Good Investment

The soundness and attractiveness of the Texas Medical Association's group disability insurance program was reaffirmed in a packet of information headed by a letter signed by the Council on Medical Economics and the Board of Trustees and mailed last month to all members of the Association. It was pointed out that the program had been questioned in a letter carrying the letterhead of a doctor and sent first to the members of his county medical society and then a week later received by physicians throughout the state in an envelope bearing no return address but postmarked in a city other than that in which the doctor resides. It was stated, furthermore, that physicians had received only three days afterward a letter of solicitation from an insurance agency inviting participation in an accident and sickness protection plan formerly endorsed, though not sponsored by, the Texas Medical Association but on which the endorsement had been withdrawn. The council and board expressed the belief that members of the Association should be given the pertinent facts.

In addition to the five page letter explaining their position, the Council on Medical Economics and Board of Trustees submitted copies of the following:

1. A reprint from the transactions of the 1956 annual session giving a supplementary report of the Council on Medical Economics reviewing background information about the Association's insurance program, including relationships with the insurance agency handling the policy formerly endorsed by the Association, and expressing confidence in the newly sponsored Lumbermens Mutual Casualty Company plan.

2. A reprint of the reference committee report on this supplementary report.

3. A letter of September 21 from the council and board calling attention to a modification in the Association's program underwritten by Lumbermens to permit greater flexibility in the policies and encourage greater participation through less expensive premiums.

4. A letter dated November 20 from Lumbermens Mutual Casualty Company indicating that the 10 year sickness benefit policy originally offered to Texas doctors definitely will not be cancelled in 1957 if the members do not choose to change to the three year policy made available in the fall but noting that effective November 1, 1957, the 10 year policy will be continued with perhaps the premium rates graduated by age brackets.

5. Excerpts from 1954 and 1955 issues of the *Texas Dental Journal* setting forth problems of the Texas Dental Association under similar circumstances.

The Council on Medical Economics and Board of Trustees, in asserting once more their faith in the Lumbermens Mutual Casualty Company, "one of America's largest insurance firms with assets totaling more than $202,000,000, and a surplus of $22,000,000, and $10,000,000 of unassigned reserve," and in the Charles O. Finley and Company, "the largest administrator of group insurance programs in the nation for medical organizations," invited members of the Association to raise questions at any time about the group disability insurance program. They requested, however, the courtesy of raising such questions with officers or representatives of the Texas Medical Association prior to raising them in public, pointing out, "In this day when it is imperative that all physicians work together as a team, it is unfortunate that a member questions the integrity of those who hold positions of trust while serving without compensation, and seeks to undermine the objectives and goals of his medical association."

Services Brochures Being Distributed

Brochures summarizing the services of the Texas Medical Association to its members, each personalized for its owner by bearing his name, are being distributed to members of the Association. Some are being handed to members of county medical societies during visits from officials of the state organization; others are being mailed. Completion of the distribution is anticipated by early 1957.

These brochures, in preparation for some months, are the third approach taken within the past two years to put across the message to members of the Association of what they receive for their annual dues. The other special efforts have been the program of visitations that has brought to almost every county medical society in the state one or more elected officers or central office staff members and the portable exhibit about the Association that has been displayed at annual sessions, postgraduate assemblies, and some county meetings.

Executive Council Weekend Provides Variety of Activities

Legislation, helpful hints for county medical society officials, and an indoctrination program for new members of the Texas Medical Association, plus the presentation of the twenty-five thousandth volume to the Memorial Library, are scheduled to provide a busy weekend for doctors who are in Austin January 26 and 27 for these activities and for the meeting of the Executive Council.

Guest speakers at the sixth annual conference of county society officials and the symposium on legislation January 26 will be the Honorable Olin Teague, Bryan, representative in Congress of the Sixth District of Texas; C. Joseph Stetler, Chicago, director of the Law Department, American Medical Association; and Mrs. Mary D. Cain, Summit, Miss., editor and manager of the *Summit Sun*.

At the indoctrination program Saturday, the first of its kind to be held, officials of the Association plan to welcome new members, describe what is expected of them and what they may expect from the Association, and answer questions regarding organized medicine and/or the practice of medicine in general.

During the afternoon, the formal presentation of the Memorial Library's twenty-five thousandth volume will be made. Also, there will be a recognition of persons and organizations that have donated $1,000 or more to the Library.

Councils and committees of the Association will meet throughout the day, and a hospitality hour has been planned for the evening.

Sunday morning, the Executive Council will be in session, and chairmen of councils and committees will present their reports at that time.

Conference of County Medical Society Officials and Symposium on Legislation

Texas Medical Association Headquarters Building Austin, January 26

Morning Program, 10:30 a. m.

Call to Order.—DR. DENTON KERR, Houston, President-Elect, Texas Medical Association.

A Look at Texas Medicine Today.—DR. MILFORD O. ROUSE, Dallas, President.

An Accounting of Stewardship; What Happens to Your $50 Dues.—DR. R. W. KIMBRO, Cleburne, Chairman, Board of Trustees.

Obligations of Members to Organized Medicine and Medical Ethics.—DR. J. T. BILLUPS, Houston, Chairman, Board of Councilors.

Services of the Central Office; Improving Liaison with County Medical Societies.—C. LINCOLN WILLISTON, Austin, Executive Secretary.

Introduction of Guest.—DR. G. W. CLEVELAND, Austin.

The Eighty-Fourth Congress in Retrospect, Current Trends in National Legislation; What's Ahead for 1957.—C. JOSEPH STETLER, Chicago, Director, Law Department, American Medical Association.

MR. STETLER

Luncheon.—Courtesy of the Texas Medical Association.

Afternoon Program, 1:30 p. m.

Introduction of Guest.—DR. HERBERT DONNELL, Waxahachie.

MR. TEAGUE

The Veteran and Medical Services.—THE HONORABLE OLIN TEAGUE, Bryan, Representative in Congress, Sixth District of Texas.

Panel Sessions: Increasing the Effectiveness of County Medical Societies.

Panel A.—The Small County Medical Society (5-24 members).—DR. NEIL BUIE, Marlin, Moderator. Dr. R. Harvey Bell, Palestine; Dr. M. G. Hutchins, Conroe; Dr. E. E. Lowrey, Gatesville; and Dr. J. J. Slaugenhops, Vernon.

Panel B.—The Medium-Sized Medical Society (25-99 members).—DR. CARLOS E. FUSTE, Alvin, Moderator. Dr. Mack F. Bowyer, Abilene; Dr. S. W. Bradford, Tyler; Dr. Edward T. Driscoll, Midland; and Dr. Herbert Donnell, Waxahachie.

Panel C.—The Large County Medical Society (100 members or more).—DR. ELLIOTT MENDENHALL, Dallas, Moderator. Dr. R. L. Deter, El Paso; Dr. John L. Matthews, San Antonio; Dr. William Klingensmith, Amarillo; and Dr. William E. Powers, Wichita Falls.

Introduction of Guest.—DR. DENTON KERR, Houston, President-Elect.

Big Government! Little You!—MARY D. CAIN, Editor and Manager, *Summit* (Miss.) *Sun.*

MRS. CAIN

Evening Program, 6:00 p. m.

Hospitality Hour.—Driskill Hotel.

Indoctrination Program

Texas Medical Association Headquarters Building
Austin, January 26

Morning Program, 9:30 a. m.

Registration and Coffee Hour.

DR. MILFORD O. ROUSE, Dallas, President, Texas Medical Association, presiding.

Call to Order.—DR. DENTON KERR, Houston, President-Elect.

A Look at Texas Medicine Today.—DR. ROUSE.

An Accounting of Stewardship; What Happens to Your $50 Dues—DR. R. W. KIMBRO, Cleburne, Chairman, Board of Trustees.

Obligations of Members to Organized Medicine and Medical Ethics.—DR. J. T. BILLUPS, Chairman, Board of Councilors.

Services of the Central Office; Improving Liaison with County Medical Societies.—C. LINCOLN WILLISTON, Austin, Executive Secretary.

DR. FOY H. MOODY, Corpus Christi, Vice-President of the Association, presiding.

Medical Economics Considerations in the Practice of Medicine.—DR. HARVEY RENGER, Hallettsville, Chairman, Council on Medical Economics.

Public Relations, Public Opinion, and Medical Practice.—DR. VAN D. GOODALL, Clifton, Committee on Public Relations.

Voluntary Prepayment Health Insurance.—DR. ROY T. LESTER, Dallas, Medical Director, Group Hospital Service.

Luncheon, 12:30 p. m.

Afternoon Program, 1:30 p. m.

Legislative Issues and Their Effect upon Medical Practice.—DR. G. W. CLEVELAND, Austin, Chairman, Council on Medical Jurisprudence.

Workmen's Compensation Laws.—SMITH PETTIGREW, Dallas, Medical Coordinator, Texas Employers' Insurance Association.

Services to Doctors Through Public Health Agencies.—DR. HENRY A. HOLLE, Austin, State Health Commissioner.

Texas State Hospitals; Procedures for Admission.—DR. JAMES H. WOOTEN, JR., Columbus.

Legal Aspects of Your Practice; Malpractice and How to Avoid It.—PHILIP R. OVERTON, General Counsel, Texas Medical Association.

Question and Answer Period.

Evening Program, 6:00 p. m.

Hospitality Hour.—Driskill Hotel.

Library Presentations
Texas Medical Association Headquarters Building
Austin, January 26, 3:50 p. m.

DR. MILFORD O. ROUSE, President, Texas Medical Association, presiding.

History of Memorial Library and Presentation of Benefactors.—DR. R. W. KIMBRO, Cleburne.

Presentation of Rare Books.—MRS. RICHARD C. BELLAMY, Liberty, President, Woman's Auxiliary to the Texas Medical Association.

Motion Pictures—Exhibits On View at Annual Session

An exhibit program of motion pictures, scientific exhibits, and technical exhibits is being completed for the 1957 annual session of the Texas Medical Association in Dallas, April 27-May 1.

Although there has been a heavy request for exhibit space, space is still available for scientific exhibits, and physicians wishing to obtain a booth are urged to write Dr. J. Edward Johnson of Austin, chairman of the Committee on Scientific Exhibits. All 100 technical exhibit booths have been reserved. Motion pictures are now being previewed by physicians to assure a well rounded, educational film program for the meeting, and suggestions of outstanding films will be welcome by the Memorial Library of the Association.

Motion pictures may be seen Sunday evening, April 28, and Monday, Tuesday, and Wednesday mornings at the Adolphus Hotel. Scientific exhibits will be displayed in the Lounge of the Baker Hotel and technical exhibits in the Ballroom and Regency Room of the Adolphus Hotel on Sunday afternoon, all day Monday and Tuesday, and Wednesday morning. A complete schedule of motion pictures and list of exhibits will be published in the March *Journal*.

Two special features of the motion picture program are the planned session of lay films for doctors and their wives and another of films by Texas doctors. Expected to be included in the program for laymen is "The Case of the Doubting Doctor," a color, sound film showing a "doubting" doctor who, prompted by a bet, sets out to prove his criticisms of the American Medical Association and medical societies and instead finds himself taking his first good look at AMA activities which benefit both the physician and the public. A new medicolegal film also is a possibility for this program.

"Anterior Resection of Rectosigmoid with Primary Anastomosis" by Dr. G. V. Brindley of Temple is one of the motion pictures scheduled for the session of Texas films. A picture by Dr. Michael E. DeBakey of Houston also will be among those on the Texas program.

The film of the Internal Medicine Series produced with the collaboration of the American College of Physicians, "Pitfalls in Management of Refractory Heart Failure," is expected to be popular among Texas physicians. Another outstanding segment of the motion picture program is expected to be the film "Early Management of the Severely Burned Patient."

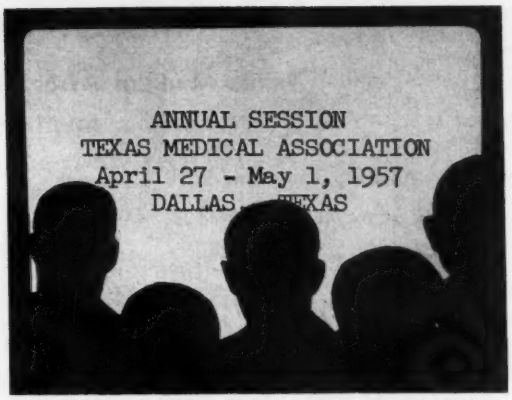
Other scientific motion pictures already scheduled are on such subjects as syphilis, gout, operative cholangiography, refractory heart failure, severe burns, varicose veins, antituberculosis drugs, aortic graft for arteriosclerosis obliterans, and successful surgical separation of Siamese twins.

Among the scientific exhibits, Drs. Charles L. Martin and James A. Martin, Dallas, will present a display on "Is Radium Still Needed for Cancer Therapy?" with illustrations and charts selected to demonstrate the exhibitors' opinion that low intensity radium sources properly applied constitute the best therapy for accessible neoplasms.

A 30 year survey of all thyroidectomies in Hermann Hospital, Houston, with emphasis on the high incidence of carcinoma and other malignancies coexistent with other thyroid diseases, will be shown by Drs. Henry Goodwin Glass, George W. Waldron, and Wilson G. Brown.

Baylor University College of Medicine, Houston, will present "Use of Ganglionic Blocking Agents in Hypertension" with Drs. John H. Moyer, Ralph V. Ford, Coleman Caplovitz, and Edward W. Dennis in charge.

Another exhibit will be a display of the Texas Society of Pathologists, "Teamwork Is Our Goal," using selected advertisements from its *Texas State Journal of Medicine* series during the past 10 years point out laboratory advances to practitioners.



Motion pictures, scientific exhibits, and technical exhibits, carefully screened to assure their usefulness to the practicing physician, will be an important part of the 1957 annual session of the Texas Medical Association.

Three awards—first, second, and honorable mention—will be made for the individual and for the institutional exhibits judged best in teaching value; practical value; eye appeal; level of scientific merit; and simplicity, ingenuity, artistic embellishment, and cleverness in achieving the central objective of the exhibit.

A concentrated area has been set aside for technical exhibits, and as large a number as has ever been presented at an annual session will be displayed in Dallas. The exhibits will include pharmaceuticals, x-ray and surgical supplies, books, foods and vitamins, and many others.

Anson Jones Award

The Anson Jones Award for accuracy and quality of lay medical reporting has been established by the Texas Medical Association and will be given for the first time in 1957. The annual award is open to every Texas reporter who serves a single newspaper, a news service, or a periodical.

Information about the award, which has a prize of $250 and a plaque, has been sent to every county medical society and every editor in the state. Entries are to be submitted by the editor to the president of the local county medical society along with a copy of the particular reporting on which the entrant is to be judged—either a single news story, a column, or a series of articles. The county society is to forward the entries from its area to the Association's Executive Secretary by January 1 for judging by the Committee on Public Relations. Announcement of the winner will be made at the Executive Council meeting in January, and the plaque and cash prize will be presented at the annual session in the spring.

The award recognizes Dr. Anson Jones, who was a physician and a journalist as well as a statesman and the last president of the Republic of Texas. He drafted and presented the first request for governmental regulation of the practice of the healing arts in the Republic of Texas "to protect Texans from individuals assuming to be physicians who . . . have neither graduated or been licensed . . . for ignorance and quackery are undeniably injurious." Prior to the establishment of the Texas Medical Association in 1853, Dr. Jones urged the formation of a medical society—"Association of Physicians of the Republic of Texas for the Promotion and General Diffusion of Medical Knowledge"—or board of medical censors.

Programs Offered for County Societies

Programs on socioeconomic problems, tuberculosis, and cancer are available to county medical societies through the central office of the Texas Medical Association. Some county societies already have been notified by mail that these programs are available. A test mailing of 17 letters in July resulted in the presentation of eight programs.

In October, material on each topic went to about one-third of the societies, each topic to a different group; later, the lists will be rotated so that eventually each society will have complete information on all three topics.

Speakers from the central office staff, along with several officers and representatives of the Association, are available for programs on socioeconomic problems. The Committee on Tuberculosis is prepared to arrange three kinds of programs: (a) speakers on tuberculosis and allied chest conditions; (b) film programs covering the same subjects; and (c) symposium-type presentations. Fifty members of the Texas Chapter, American College of Chest Physicians, are available as speakers. Kinescopes, films, and speakers are available for programs on more than 40 different aspects of cancer. The cost of these programs is borne by the Texas Division, American Cancer Society.

PERSONNEL DATA COLLECTED

Almost 2,000 physicians already have completed and returned to the Texas Medical Association personnel data blanks sent to all members of the Association early in November. The forms are being made a part of the permanent record and include biographical information about the member and his family, his educational background, medical practice, research activity, authorship, activities in business or other fields, military service, organizations, honors, hobbies, and any other data of interest. Photographs also are requested.

The personnel data is being collected at the Association headquarters as another service to the members—to provide accurate biographical facts and a recent photograph of them when called upon. Often periodicals published for the medical profession, newspapers, and clubs before which a doctor is to appear turn to the Association for authentic and prompt help. Now that the project is well under way, physicians may feel free to direct inquiries for such information to the Texas Medical Association.

C. Lincoln Williston, executive secretary of the Association, urges all physicians who have not yet returned their personnel data sheets to do so right away. Also, if a physician did not receive the form, he is asked to notify Mr. Williston and one will be sent to him by return mail.

★ American Medical Association

AMA Films Available

A revised list of films available through the American Medical Association's motion picture library has been prepared, and copies are available upon request. The catalog lists 89 medical films suitable for showing to medical societies, hospital staffs, and other scientific groups. It also includes 45 health films of interest to physicians who may be called upon to speak before lay audiences.

Action Taken at Clinical Session

Medical ethics, veterans' medical care, radioactive isotopes, continuance of the American Medical Association's interim session, hospitalization for patients with alcoholism, and a report of the Committee on Medical Practices were among the wide variety of subjects acted upon by the House of Delegates at the AMA's tenth clinical meeting held in Seattle in November.

At the opening session, Dr. Edward M. Gans, Harlowton, Mont., was awarded a gold medal and a citation as General Practitioner of the Year.

Total registration at the end of the third day of the meeting was 5,191.

The subject of greatest interest during the meeting was the proposed 10 section revision of the Principles of Medical Ethics originally submitted at the June, 1956, annual meeting. The reference committee reported that at least four areas needed more specific attention, and the proposed principles were referred back to the Council on Constitution and By-Laws for further study and consideration.

Veterans' medical care was endorsed by approving in principle that new legislation be enacted to limit such care to veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated. Two resolutions were adopted condemning as unlawful the practice of Veterans Administration hospitals of admitting patients who are covered by workmen's compensation insurance or private health insurance and send bills for the cost of their care.

A new policy on hospital use of radium and radioactive isotopes was established which rescinded a former action limiting such use to board-certified radiologists. The new statement says that a committee on radioactive substances consisting of qualified physicians may administer the use of these substances.

Because of the public relations value of the interim meetings, it was decided to continue them.

The House also approved a statement that alcoholism should be considered as a qualification for admission to a hospital when the patient requests it, and that the barring of chronic alcoholics from hospitals should be discouraged.

Another action taken was the amendment of a previous directive to remove legal objections. This directive now states that the AMA representatives on the Joint Commission of Accreditation of Hospitals shall be instructed to stimulate action leading to the warning, provisional accreditation, or removal of accreditation of hospitals which exclude or restrict hospital privileges for general practitioners as a class.

The next meeting will be June 3-7 in New York.

Texas Report on Clinical Session

Investigation of medical care for civil service employees will receive further attention at the national level as a result of successful efforts of Texas delegates at the American Medical Association's clinical session held in Seattle, Wash., November 27-30.

A resolution pertaining to this subject was adopted earlier this year by the House of Delegates of the Texas Medical Association. Introduced by the Bexar County Medical Society, the resolution pointed out that medical care of civil service employees represented a further encroachment upon the private practice of medicine by the federal government. This issue is of interest not only to physicians in San Antonio, but also to the entire state inasmuch as there are an estimated 118,000 civil service employees in Texas.

As a result of testimony presented by Texas delegates at Seattle, the American Medical Association House of Dele-

gates recommended to the Committee on Federal Medical Services that it make an on-the-spot survey of a "pilot plan" of medical care for civil service employees which now is being undertaken at military installations at San Antonio. The House of Delegates requested that the entire question of medical care for civil service employees be investigated and that a report be presented to the House at the AMA's annual session next June.

The House of Delegates deferred action on another Texas resolution which recommended enactment of legislation to provide for an accelerated tax write-off program to apply in the construction or expansion of proprietary hospitals. Action will be delayed until a study and survey of the current status of hospital construction in the United States has been completed by the AMA's Council on Medical Service. The resolution was drafted by the Bosque County Medical Society, received approval by the Texas House of Delegates, and then was carried to the national organization.

Texas physicians played prominent roles in the deliberations of the AMA House of Delegates. Dr. B. E. Pickett, Sr., Carrizo Springs, chairman of the Council on Constitution and By-Laws, presented the proposed Principles of Medical Ethics. Dr. F. J. L. Blasingame, Wharton, delivered a report on the World Medical Association; he serves as a delegate to the international organization from the AMA.

Three of Texas' seven delegates, Dr. L. C. Heare, Port Arthur; Dr. Milford O. Rouse, Dallas; and Dr. James H. Wooten, Jr., Columbus, were on reference committees of the House of Delegates. Other Texas delegates who served at the clinical session were Dr. J. L. Cochran, San Antonio; Dr. Truman C. Terrell, Fort Worth; Dr. J. C. Terrell, Stephenville; and Dr. Roy T. Lester, Dallas.

Dr. J. M. Travis, Jacksonville, recipient of the national General Practitioner of the Year Award in 1952, briefly addressed the House of Delegates.

Congress on Industrial Health

The Council on Industrial Health of the American Medical Association will hold the seventeenth annual Congress on Industrial Health February 4-6 in Los Angeles. The discussions will be open to all physicians, nurses, industrial hygienists, engineers, and others interested in occupational health.

The program will consist of sections on vision in industry, health hazards of agricultural chemicals, new concepts in the management of burns, and new developments in hearing loss due to industrial noise.

There is no registration fee, and complete programs may be obtained from the AMA, 535 North Dearborn Street,

MEDICAL EDUCATION TO BE DISCUSSED

Graduate medical education for general practice will be the topic of discussion at the opening session of the annual Congress on Medical Education and Licensure February 10-12 in Chicago. This meeting is sponsored by the American Medical Association's Council on Medical Education and Hospitals, the Federation of State Medical Boards of the United States, and the Advisory Board for Medical Specialties.

HILL-BURTON PROGRAM SURVEYED

A survey covering the first 10 years of the operation of the Hill-Burton Hospital Construction program is being conducted by the American Medical Association's Council on Medical Service. It is being undertaken to determine to what extent the original objectives are being fulfilled, what effect recent progress in medical and hospital care may have had on these objectives, and what changes, if any, might be suggested to improve the program.

★ County Societies

Emergency Call Systems

There is a well established system of obtaining a doctor in a hurry in some areas of Texas.

Returns from a questionnaire on emergency call services indicate that the majority of county medical societies cooperate with hospitals in the area to keep a list of doctors on call at all times, but the actual service is operated by the hospital. *Panola County Society* states that the society operates its own call system, but lists of doctors on call are at the hospital where patients call for aid. *Dallas* and *Travis Counties Societies* maintain a call system through a private telephone answering service. In *Harris County,* the medical society and the Medical and Dental Service Bureau cooperate in this venture; the county society provides a card file of volunteer physicians.

Orange County Society reports that only general practitioners take emergency calls, but *Bexar County Society* requires every member to serve on its emergency panel during his first three years of membership; after that, a physician may volunteer or not, just as he chooses.

The most frequent means of publicizing emergency services are newspaper advertisements and notices in the yellow pages of the telephone directory. *Tarrant County* sends a welcoming card with information on its Physicians Exchange to all newcomers. Generally, physicians believe, the public is aware that a doctor may be obtained at all times through the local hospital or through the emergency call service if one is in operation.

Problems

The biggest problem, as doctors see it, is abuse of emergency call systems by patients whose cases cannot be classified as emergencies. Alcoholics and narcotics addicts also cause complications. The *Canyon Reef Medical Society* (Snyder) has tried to alleviate this problem to some degree by charging a minimum emergency room fee in the hospital, which makes emergency care more expensive than regular clinic calls. In *Colorado-Fayette* and *Crane-Upton-Reagan Counties,* there has been some difficulty persuading patients to accept treatment from doctors on call rather than from their own physicians.

From the patients' point of view, one problem is lack of willingness of some doctors to take emergency cases even though they are "on call." Persons who work closely with the call system agree that if such attitudes become widespread, the effectiveness of the system is lost, and the public loses confidence in it.

How Many Doctors?

Depending on the size of the community served, from 1 to 200 physicians are on call at all times, the survey showed. Generally, in societies where there are from five to 25 members, one or two doctors are on call. *Grayson County Society,* which has 50 members, reports that 35 doctors are on call through the hospital emergency roster at all times, while *Gregg County Society,* the 71 members of which serve Longview and the surrounding area, keeps only two physicians on call. General practitioners participate mostly, and the specialists there are not on the regular rotation call.

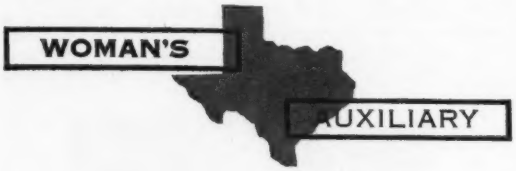
Travis County Society, with 231 members, reports that from five to 15 doctors are always on call, and that young physicians participate more readily than older ones. *El Paso,* which has a county society of comparable size, reports that all of the physicians there are on call at all times through an independently operated service. Both *Dallas* and *Harris*

Counties, which have more than 1,000 members, have about 200 physicians on call.

Where No System Exists

There are many communities, especially those where population is scattered, where no system is employed to keep doctors on call. Each doctor handles his own patients or subscribes to a private answering service; these are small communities and the citizens know that their doctor will come when needed.

Two notable exceptions to the usual size of communities having no call service are *Wichita* and *McLennan Counties Societies*, which serve populations of more than 100,000 each. The secretary reports that individual answering services for Wichita County physicians have been satisfactory for emergency as well as routine use. A medical bureau in Waco (McLennan County) attempts to locate individual doctors, but no call panel exists. The secretary reports that this system is helpful, but not as effective as could be desired.



Christmas Card Sales Total 28,000

More than 28,000 specially designed Christmas cards were sold by the Woman's Auxiliary to the Texas Medical Association to aid the American Medical Education Foundation. The 1,120 orders for cards exceeded the expectations of the Auxiliary as the card was introduced in October after many members had ordered their personal Christmas cards.

Profit from the sale will be distributed among the Texas medical schools through the Foundation. Auxiliary sales will also be credited toward the annual awards given for contributions to AMEF.

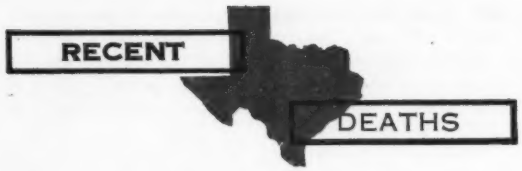
Motion Picture Usage Increased

The demand by Auxiliary members for program material from the Texas Medical Association Memorial Library motion picture collection has increased, particularly for nurse recruitment films.

To serve the greatest number of members it is necessary to schedule film use within a few days of each other. Delays are eliminated if films are forwarded promptly to the next user, when so instructed, without returning the films to the Library in Austin.

Auxiliary members are urged to comply with this request and ship films immediately following a showing that others may have advantage of this service.

Officers of the Woman's Auxiliary to the Texas Medical Association for 1956-1957: President, Mrs. Richard C. Bellamy, Liberty; President-Elect, Mrs. H. S. Renshaw, Fort Worth; First Vice-President, Mrs. Harold Lindley, Pecos; Second Vice-President, Mrs. Ramsay H. Moore, Dallas; Third Vice-President, Mrs. William D. Nicholson, Freeport; Fourth Vice-President, Mrs. Lynn Hilbun, Henderson; Fifth Vice-President, Mrs. R. B. G. Cowper, Big Spring; Treasurer, Mrs. William C. Barksdale, Borger; Recording Secretary, Mrs. J. L. Jinkins, Galveston; Corresponding Secretary, Mrs. E. R. Richter, Dayton; Publicity Secretary, Mrs. Joe Thorne Gilbert, Austin; Parliamentarian, Mrs. John C. Parsons, San Antonio; Executive Secretary, Miss Hazel Casler, Austin.



DR. R. LOPEZ GUERRA

Dr. Raul Lopez Guerra, who had practiced medicine in Fort Worth since 1927, died of a heart attack September 18, 1956, while vacationing in his home town, Leon, Guanajuato, Mexico.

He was born in Leon on May 27, 1897, and was the son of Francisco Lopez Valdivia and Basilisa Guerra de Lopez. He went to elementary and high school in Leon, then received his medical degree from the National University of

DR. RAUL LOPEZ GUERRA

Mexico, Mexico, D. F., in 1923. He interned at the General Hospital of Mexico City, and he was associated with the State Biological Institute in Leon. In 1926 he received a license to practice medicine in Texas. He practiced one year in San Antonio, then moved in 1927 to Fort Worth, where he remained throughout his career.

Dr. Guerra was a member of Tarrant County Medical Society, Texas Medical Association, American Medical Association, Mexican Red Cross, Fort Worth Chamber of Commerce, Woodmen of the World, Alianza Hispano-Americano, and the Catholic Church. He was a staff member of St. Joseph's and Harris Hospitals in Fort Worth. Dr. Guerra was active in promoting good relations between the people of Mexico and the United States, and performed many welfare services for people of Latin descent.

He was married October 30, 1927, in San Antonio to Miss Aurelia Avila. She survives, as do a son, Raul Lopez Guerra, Jr., and two daughters, Basilisa and Aurelia Lopez Guerra, all of Fort Worth; two brothers, Francisco Lopez Guerra and Juan Lopez Guerra, Mexico, and five sisters, Misses Clara and Romualda Lopez Guerra, Mrs. Basilisa Lopez de Leon, Mrs. Genoveva Lopez de Lopez, and Mrs. Clementina Lopez de Herrera, all of Mexico.

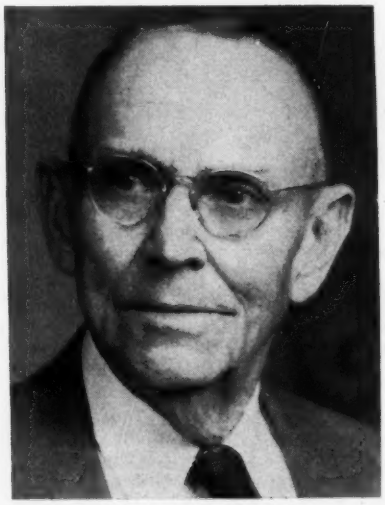
DR. T. J. McCAMANT

Dr. Thomas Jefferson McCamant, an honorary member of the Texas Medical Association, died at his home in El Paso, Texas, September 2, 1956. He was suffering from acute cardiac decompensation.

He was born in Glen Rose, November 27, 1873; his parents were William G. and Susan Wells (Gardner) McCamant. After completing his preliminary education at the Glen Rose public schools, he entered Glen Rose Collegiate Institute and was graduated in 1894. He received his doctor of medicine degree from the Medical Department of Fort Worth University in 1902, and practiced briefly in Aspermont before moving in 1910 to El Paso, where he remained throughout his career.

Dr. McCamant was a member and past president of the El Paso County Medical Society, and in 1927 and 1929 he served the Texas Medical Association as chairman of the Section on Public Health. He was elected to honorary membership in the Association in 1950 after having been a member continuously since 1911.

He was appointed director of the County Health Unit in El Paso in 1915 and served in that capacity until 1932, when he was appointed by the state to organize and direct the El Paso-Hudspeth-Culberson health unit. This was the first combined city and county unit of its type in Texas, and was used as a training center and as a model from which similar units later were organized. It was awarded recognition plaques for outstanding work by the American Public Health Association in 1934, 1935, and 1936. In 1937, Dr. McCamant resigned his position to enter private practice. He also was local surgeon for the Texas and Pacific Railroad.



DR. T. J. McCAMANT

A sports enthusiast, he was instrumental in getting the lake above Elephant Butte Dam stocked with fish. He was one of the organizers and was the first president of the El Paso Game Protection Association; in addition to these activities, he promoted Boy Scout work and amateur baseball. Dr. McCamant was a member of his local Masonic Lodge more than 50 years, and was a Royal Arch Mason, a Knight Templar, and a life member of El Maida Shrine.

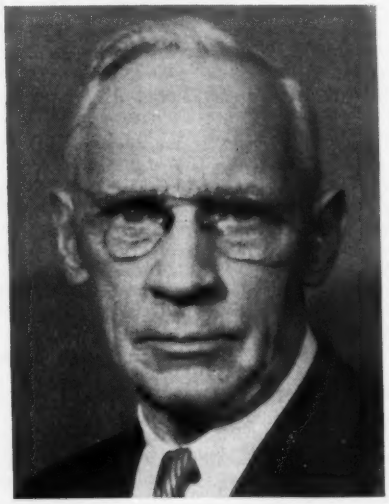
His military service began when he enlisted in the Army as a private and fought during the Spanish American War. In World War I, he organized and commanded a field hospital in the thirty-sixth division and was overseas nine months. He was chairman of the El Paso area for procurement and assignment of doctors for the armed services during World War II, and at the time of his death he held a reserve commission as a colonel in the Army.

Miss Essie Laura Killough and Dr. McCamant were married October 27, 1914, in El Paso. Mrs. McCamant survives as do a son, William G. McCamant, Seattle, Wash.; a daughter, Mrs. N. A. Sax, Midland; and four granddaughters, Margaret and Laura McCamant, Seattle, and Valerie and Suzanne Sax, Midland.

DR. WALTER E. COX

Dr. Walter Edward Cox, Brownsville, Texas, died at his home September 17, 1956, of general arteriosclerosis.

Dr. Cox was born November 15, 1877, in London, England; his parents were George and Elizabeth (McGill) Cox. He received his preliminary education at Canterbury Cathedral, and received a bachelor of science degree in 1900 from the Christian Polytechnic School, London, where he studied



DR. WALTER E. COX

mathematics, Greek, and Latin. When he was 26, Dr. Cox came to Canada, and entered McGill University, Montreal, where he began his medical training. He was graduated from the University of Arkansas School of Medicine, Little Rock, in 1912, and interned at the Physicians and Surgeons Hospital there. His residency was spent at St. Joseph's Hospital in Hot Springs, and Dr. Cox was in private practice there for 20 years before moving in 1930 to San Angelo. After two years, he moved to McAllen, where he practiced briefly before joining the Eighth Corps Area Civilian Conservation Corps to work in Arizona and New Mexico. In 1942, Dr. Cox became director of the Hardin-Tyler Counties Health Unit. He held the same position in Brazoria County from 1943 until 1948, and in Bee County from 1948 until 1950.

Dr. Cox had been a member of the Texas Medical Association through the Hardin-Tyler Counties Medical Society, and was elected to honorary membership in the state organization in 1952. He was district chairman of the Boy Scouts

health committee, selective service examiner for Hardin and Tyler Counties during World War II, and chairman of the disacter committee of Brazoria County. Music was his hobby; he was a lyric tenor soloist in the Episcopal and Central Methodist Churches in Hot Springs for 18 years. He began singing as a choir boy in the Canterbury Cathedral. He was a member of several local music groups and earned much of his educational expenses by singing in choirs and as soloist. He was once a member of the Horace Rainer Choir of Boston. Dr. Cox was a Mason and a member of the Shrine, and did much philanthropic work among the Latin American people, establishing a clinic at Bella Vista Christian Church after a severe freeze in 1950, and gave his medical services free.

Miss Esther Robertson and Dr. Cox were married in June, 1910, in Hot Springs. They had two sons, Willard R. Cox, Houston, and Walter Edward Cox, DeQueen, Ark., both of whom survive. Dr. Cox was married again in July, 1930, to Mrs. Ruby Goodwin Rexrode. She survives, as do a stepson, Clyde Cole Rexrode, Kansas City, Kan.; three stepdaughters, Mrs. Allene Jennings, Brownsville; Mrs. Mary Frances Irwin, Lubbock; and Mrs. Ruby Lynn Irwin, Corpus Christi; a brother, Albert Cox, and two sisters, Miss Luisa Cox and Mrs. Elizabeth Cox Harris, all of London; two nephews, Vernon Cox, Dallas, and Cliveden Cox, Fort Smith, Ark.; two grandnephews, Dr. John K. Cox, Houston, and Dr. Robert Cox, Palestine; and 14 grandchildren.

DR. W. B. McKNIGHT

Ninety-seven year old Dr. William Burney McKnight, who had practiced medicine in Mansfield, Texas, since 1895 and was one of the three last surviving charter members of the Tarrant County Medical Society, died at his home in Mansfield October 1, 1956.

DR. W. B. McKNIGHT

The son of William Dunham and Susan (Wynne) McKnight, Dr. McKnight was born April 18, 1859, in Winnsboro, but moved to Tarrant County when he was 10 years old. He attended the old Mansfield Male and Female Institute and was graduated from the University of Louisville Medical Department, Louisville, Ky., in 1886. He interned in New York's Bellevue Hospital for two years before beginning his medical practice in Springtown, Texas, in 1888. Dr. McKnight went back to Bellevue Hospital for postgraduate training in 1892, and moved in 1895 to Mansfield where he practiced until his retirement about 15 years ago. For the past several years, he has devoted most of his time to stock farming.

Dr. McKnight had been a member of the Texas and American Medical Associations through the Tarrant County Medical Society since it was organized. He served as secretary for the Section on Medicine and Diseases of Children in 1915, and in 1931 was elected to honorary membership in the state Association. He also was a member of the Sons of the American Revolution and had been a Mason for 60 years. He was a steward in the Methodist Church.

Miss Sallie Hodges and Dr. McKnight were married in Mansfield November 13, 1889. The couple was given a loving cup from friends and neighbors in commemoration of their fiftieth wedding anniversary in 1939. Mrs. McKnight, daughter of the first physician in the Mansfield area, was the first white girl born there. She survives, as do two sons, Dr. William Hodges McKnight, Fort Worth, and James Stephens McKnight, Mansfield; and two daughters, Mrs. Donald A. Warner and Mrs. H. S. Lattimore, both of Fort Worth.

DR. JOHN C. FERRIS

Dr. John Charles Ferris, formerly of Texarkana, Texas, died September 21, 1956, in Long Beach, Calif., of a cerebral hemorrhage.

He was born August 6, 1912, in Buffalo, N. Y., and was the son of John and Delia (Brown) Ferris. Dr. Ferris attended Catholic schools in Buffalo, and took his premedical training at Canisius College there. He received his doctor of medicine degree from Laval University Faculty of Medicine, Quebec, Canada, in 1939, and interned at the Laval University Hospitals. As a senior intern in obstetrics, he studied at St. Luke's Hospital, Montreal, and did postgraduate work in obstetrics and gynecology in 1947 at George Washington University, Washington, D. C. He took special training in psychiatry at the Saint Michel Archange, Clinic Roy Rousseau, an affiliate of the Laval University Hospitals. Dr. Ferris was in the United States Public Health Service, and had been chief medical officer of the Federal Correctional Institutions in Danbury, Conn., and Texarkana. He held the rank of senior surgeon.

Dr. Ferris was a member of the Texas and American Medical Associations through the Bowie County Medical Society. He also was a member of the Benevolent and Protective Order of Elks.

Miss Jeanne Dollar and Dr. Ferris were married September 26, 1947, in Texarkana, and Mrs. Ferris survives, as do a brother and several sisters.

DR. W. S. SANDERS

Dr. William Shirley Sanders, Jasper, Texas, president of the Jasper-Newton Counties Medical Society, died October 13, 1956, of cerebral hemorrhage following an automobile accident near Jasper.

He was the son of William Franklin and Helen R. (Clark) Sanders, and was born in Houston, November 5, 1922. He attended elementary and high schools in Houston, and earned his bachelor of arts degree from the University of Texas, Austin, in 1943. In 1946, he was graduated from the University of Texas Medical Branch, Galveston; he interned 15 months in Philadelphia General Hospital. In 1947, he began his private practice of medicine in Jasper, and was a staff member and co-owner of the Hardy-Hancock Hospital there.

Dr. Sanders had been a member of the Texas and American Medical Associations through the Jasper-Newton Coun-

ties Medical Society throughout his career, and had served the local group as secretary in 1948-1949. He also was a member of the American Academy of General Practice; Aero Medical Association; Alpha Omega Alpha, medical scholastic honorary fraternity; Nu Sigma Nu medical fraternity; Jasper Flying Club, of which he was president at the time of his death; a local Cub Scout pack committee; and the Methodist Church. He was an enthusiastic hunter, fisherman, and photographer in addition to his flying activities. He also enjoyed music as a hobby, and had played the violin with the Houston and Austin Symphony Orchestras. As a student he played the oboe in the University of Texas Longhorn Band.

DR. W. S. SANDERS

During World War II, he was an apprentice seaman in the Naval Reserve for three years, and he was a captain and flight surgeon in the Air Force from 1951 until 1953. He also was in the Air Force Reserve.

Miss Mary Virginia Stone and Dr. Sanders were married March 12, 1944, in Jasper. Survivors include Mrs. Sanders; their two children, William Edward, 9, and Susanne, 8, all of Jasper; and his parents, Mr. and Mrs. W. F. Sanders, Houston.

DR. EDWIN J. KENNEDY

Dr. Edwin Jay Kennedy, Houston, Texas, died at his home October 2, 1956, of a coronary vascular accident.

He was born August 28, 1891, in Houston, and was the son of pioneer citizens of Harris County, Dan E. and Amelia Frances Kennedy. He was educated in the Houston public schools, and earned bachelor of arts and bachelor of science degrees from Texas Agricultural and Mechanical College, College Station. He was graduated from the University of Texas Medical Branch, Galveston, in 1918. Dr. Kennedy spent his internship and residency at St. Joseph's Infirmary, Houston, and had been in general practice in Houston for more than 35 years. While he was a student, he taught zoology at the University of Texas Medical Branch.

Dr. Kennedy was a member of the Texas and American Medical Associations through the Harris County Medical Society. He was elected to inactive membership in the state organization in 1955, after having been a member since 1919. He also was a member of the Methodist Church.

He was a veteran of World War I. During World War II, he served as a medical examiner for Selective Service and more recently as chief medical examiner for the Army recruiting station in Houston. For his work, he was awarded a medal by Congress and a certificate signed by former President Harry S. Truman.

Miss Roberta Durham and Dr. Kennedy were married in Houston in 1928. She survives, as do a daughter, Mrs. C. C. Weige, Houston; three sons, William D. Kennedy, La Porte; Edwin B. Kennedy, Houston; and Shirl J. Kennedy, a senior medical student at Baylor University College of Medicine, Houston; three sisters, Miss Mildred A. Kennedy and Mrs. Blanche Kennedy, both of Houston, and Mrs. Ethel K. Bruhl, San Antonio; and a brother, Don F. Kennedy, Houston.

DR. C. S. MURPHY

Dr. Clarence Stephen Murphy of Livingston, Texas, died October 18, 1956, in a Houston hospital of carcinoma of the lung.

Born March 28, 1887, in Moscow, Texas, Dr. Murphy was the son of Ed and Martha (Tullos) Murphy. After being graduated from the Moscow High School, he attended Sam Houston State Normal College at Huntsville and obtained his degree in medicine from Tulane University, New Orleans, in 1914. Dr. Murphy served an internship at the Southern Pacific Hospital, Houston, and practiced successively in Groveton, Beaumont, San Antonio, and Livingston, moving to the latter location in 1935. Service as a captain with the Army Medical Corps in France during 1918 and 1919 broke into his civilian career.

DR. C. S. MURPHY

Dr. Murphy was a member of the Texas Medical Association through the Polk-San Jacinto Counties Medical Society. He belonged to Alpha Omega Alpha medical scholastic fraternity, the Masonic Lodge, and the Methodist Church.

Surviving Dr. Murphy is his wife, the former Miss Winnie Goodwin, whom he married January 15, 1918, in Longview; one daughter, Mrs. Ernest Reuter, Jr., Livingston; one brother, Judge E. T. Murphy, Livingston; two sisters, Mrs. O. Morrison, Livingston, and Mrs. Willis Cobb, Baytown; and three grandchildren.

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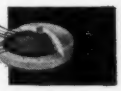

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Clinical evidence[1,2,3] indicates that to augment the therapeutic advantages of prednisone and prednisolone, antacids should be *routinely* co-administered to minimize gastric distress.

References: 1. Boland, E. W., *J.A.M.A.* 160:613, (February 25,) 1956. 2. Margolis, H. M. *et al*, *J.A.M.A.* 158:454, (June 11,) 1955. 3. Bollet, A. J. *et al*, *J.A.M.A.* 158:459, (June 11,) 1955.

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TEXAS AUTOPSY RATE AVERAGE:

1952	36%
1953	40%
1954	42%
1955	45%

(9% in three years)

NATIONAL HONOR ROLL

(Hospital Autopsy Rates for 1955)

1.	Children's Hospital, Los Angeles	93%
2.	Colorado General Hospital, Denver	93
3.	University of Illinois Research & Educational Hospitals, Chicago	90
4.	Milwaukee Children's Hospital, Milwaukee	89
5.	Rochester General Hospital, Rochester, N. Y.	85
6.	University of Minnesota Hospitals, Minneapolis	83
7.	Salt Lake County General Hospital, Salt Lake City	83
8.	Mary Fletcher Hospital, Burlington, Vermont	82
9.	St. Louis Children's Hospital, St. Louis	81
10.	University of Nebraska Hospital, Omaha	81
11.	Children's Hospital, Buffalo	81
12.	University Hospital, Madison, Wisconsin	80
13.	Mary Hitchcock Memorial Hospital, Hanover, N. H.	80
14.	University of Chicago Clinics, Chicago	79
15.	St. Joseph Mercy Hospital, Ann Arbor, Michigan	79
16.	Long Island Jewish Hospital, New Hyde Park, N. Y.	79
17.	University of California Hospital, San Francisco	78
18.	Evanston Hospital, Evanston, Ill.	78
19.	Peter Brent Brigham Hospital, Boston	78
20.	Children's Medical Center, Boston	77

TEXAS INTERNSHIP HOSPITALS

1.	El Paso General Hospital	68%
2.	Methodist Hospital, Houston	66
3.	University of Texas Medical Branch Hospitals, Galveston	62
4.	Robert B. Green Memorial Hospital, San Antonio	59
5.	Children's Medical Center, Dallas	56
6.	St. Paul's Hospital, Dallas	51
7.	Brackenridge Hospital, Austin	50
8.	Scott & White Memorial Hospital, Temple	49
9.	Jefferson Davis Hospital, Houston	47
10.	John Peter Smith Hospital, Fort Worth	46
11.	Parkland Memorial Hospital, Dallas	43
12.	St. Joseph's Hospital, Houston	43
13.	Santa Rosa Hospital, San Antonio	42
14.	Baylor University Hospital, Dallas	38
15.	Hermann Hospital, Houston	38
16.	Harris Hospital, Fort Worth	37
17.	Hotel Dieu, Sisters' Hospital, El Paso	36
18.	St. Joseph's Hospital, Fort Worth	36
19.	Providence Hospital, Waco	35
20.	Kings Daughters Hospital, Temple	34
21.	Methodist Hospital, Dallas	33
22.	Memorial Hospital, Corpus Christi	24

"The autopsy rate is considered an accurate index of the interest of the medical progress. Hospitals that consistently maintain a high autopsy rate display a sincere interest in medical education." (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, September 22, 1956, Volume 162, No. 4, pages 281 and 309-310.)

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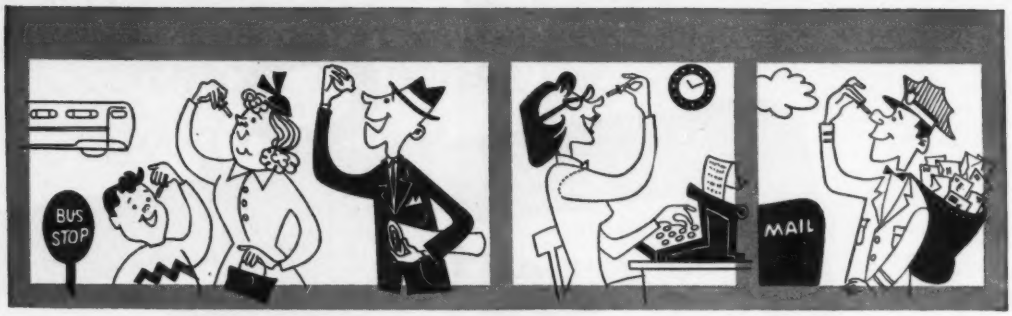

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***Nasal Spray 0.5%**
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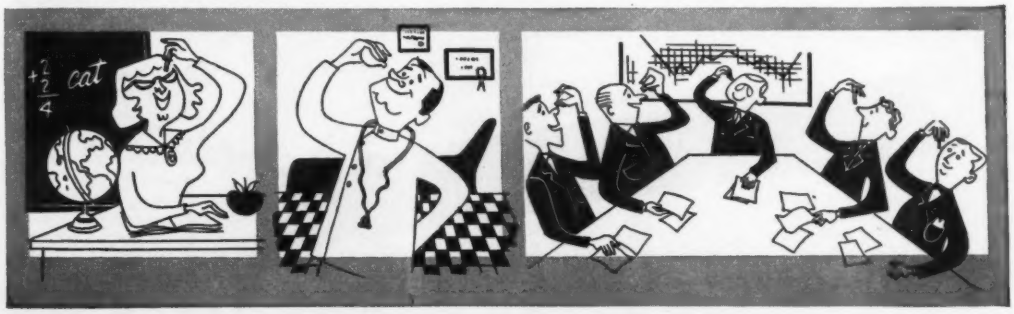
with Zephiran® chloride 1:5000,
antibacterial wetting agent and preservative
for greater efficiency

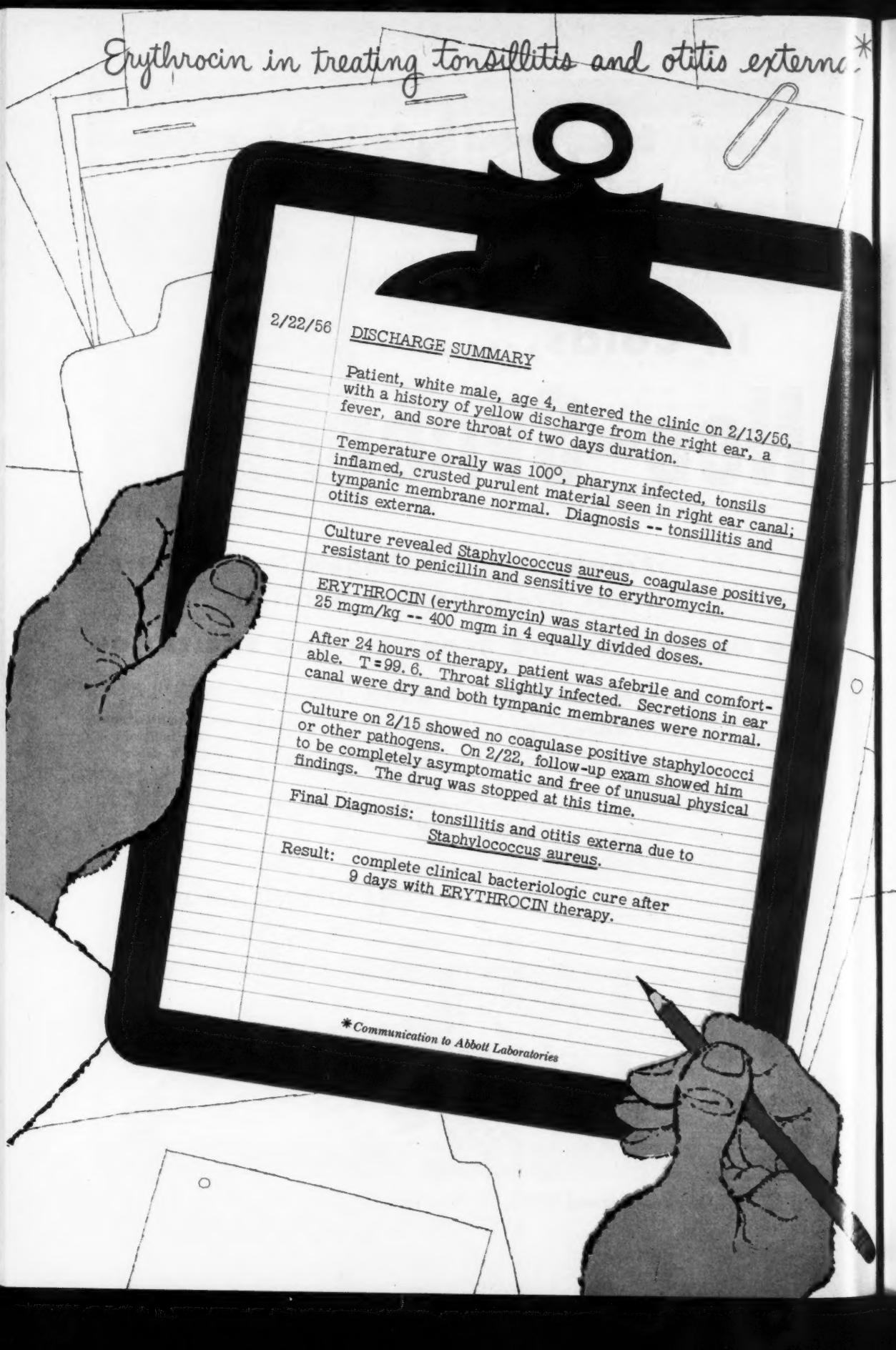
plastic, unbreakable squeeze bottle leakproof, delivers a fine mist

Neo-Synephrine (brand of phenylephrine) and Zephiran (brand of benzalkonium, as chloride, refined), trademarks reg. U.S. Pat. Off.

Winthrop LABORATORIES
NEW YORK 18, N. Y. • WINDSOR, ONT.



Erythrocin in treating tonsillitis and otitis externa*



2/22/56

DISCHARGE SUMMARY

Patient, white male, age 4, entered the clinic on 2/13/56, with a history of yellow discharge from the right ear, a fever, and sore throat of two days duration.

Temperature orally was 100°, pharynx infected, tonsils inflamed, crusted purulent material seen in right ear canal; tympanic membrane normal. Diagnosis -- tonsillitis and otitis externa.

Culture revealed Staphylococcus aureus, coagulase positive, resistant to penicillin and sensitive to erythromycin.

ERYTHROCIN (erythromycin) was started in doses of 25 mgm/kg -- 400 mgm in 4 equally divided doses.

After 24 hours of therapy, patient was afebrile and comfortable. T = 99.6. Throat slightly infected. Secretions in ear canal were dry and both tympanic membranes were normal.

Culture on 2/15 showed no coagulase positive staphylococci or other pathogens. On 2/22, follow-up exam showed him to be completely asymptomatic and free of unusual physical findings. The drug was stopped at this time.

Final Diagnosis: tonsillitis and otitis externa due to Staphylococcus aureus.

Result: complete clinical bacteriologic cure after 9 days with ERYTHROCIN therapy.

Communication to Abbott Laboratories

"clinical response good or excellent"

In one recent study, 18 patients with acute follicular tonsillitis and septic sore throat, were given erythromycin. Infecting organism was *Str. pyogenes*. The investigator stated, "*In all 18, the clinical response could be regarded as either good or excellent.*"[1]

This, of course, is only one of many reports showing the effectiveness of ERYTHROCIN against coccic infections. You'll get the same good results (nearly 100% in common, bacterial respiratory infections) when your prescription reads *Filmtab* ERYTHROCIN Stearate.

"toxicity lower in erythromycin-treated patients"

After a study of 208 patients treated with erythromycin (78), procaine penicillin (78) and a placebo (52), the investigator stated: ". . . *the incidence of toxicity* (compared to procaine penicillin) *was significantly lower in the erythromycin-treated patients.*"[1]

Actually, ERYTHROCIN stands on a remarkable record of safety. After four years, there's not a single report of a severe or fatal reaction attributable to erythromycin. Also, allergic reactions rarely occur. *Filmtab* ERYTHROCIN Stearate (100 and 250 mg.), is available in bottles of 25 and 100, at all pharmacies.

Abbott

® Filmtab—Film sealed tablets, Abbott; pat. applied for.

1. Herrell, W. E., Erythromycin, Antibiotics Monographs, No. 1, p. 29, New York, Medical Encyclopedia, Inc., 1955. *Idem* p. 30.

filmtab®

Erythrocin®

(Erythromycin Stearate, Abbott)

STEARATE

611243

BEFORE: Female, 61 years. Severe itch in anorectal and vulval areas for 7 years. Area about rectum and vulva reddened and fissured, sensitive, painful. Itching continuous. Moderate erythema.

AFTER: Hydrolamins applied 2 or 3 times daily. Itch and pain relieved first week. Within 3 weeks no irritation, erythema or itch.

STOPS

the silent agony

of PRURITUS ANI

in 98% of cases*

Breaking the itch-scratch-itch cycle is essential to control of pruritus ani. Topically applied Hydrolamins Amino Acid Ointment relieves itch *with anesthetic speed*—but without danger of tissue reaction.

In a series of 100 unselected sufferers from pruritus ani, the author* reported "Relief... experienced immediately in 98 cases." Moreover, in 88% of cases, "Within a few weeks' time there is every appearance of normal skin."

HYDROLAMINS®

AMINO ACID OINTMENT

Hydrolamins offers an isotonic, specially selected combination of amino acids derived from lactalbumin in a vehicle of polyethylene glycol 1500. Hydrolamins buffers against local (bowel) irritants. It does *not* contain local anesthetics ("caines") or astringents.

SUPPLIED in 1 oz. (28 Gm.) tubes.

Dorsey PHARMACEUTICAL COMPANY CHICAGO 14, ILLINOIS

*Bodkin, L.G., and Ferguson, E.A., Jr.: Successful Ointment Therapy for Pruritus Ani, Am. J. Digest. Dis. 18:59 (Feb.) 1951.

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LIPO GANTRISIN 'Roche'

Only two doses a day for round-the-clock effect

When you prescribe Lipo Gantrisin, your patients usually need only two doses daily, for the antibacterial action of a single dose lasts for twelve hours. Lipo Gantrisin 'Roche' is a palatable liquid especially useful for children and elderly invalids.

Lipo Gantrisin® Acetyl — brand of acetyl sulfisoxazole in vegetable oil emulsion

For patients pursued by their own emotions —

Noludar 'Roche' will help solve the problem. Not a barbiturate, not likely to be habit forming, 50 mg t.i.d. provides daytime sedation with little likelihood of somnolence, while 200 mg h.s. induces a sound night's sleep, usually without hangover. Noludar tablets, 50 and 200 mg; elixir, 50 mg per teaspoon.

Hoffmann - La Roche Inc.
Nutley 10, New Jersey

Noludar®--
brand of methyprylon

15 DAYS* WILL PROVE THE VISO-CARDIETTE'S VALUE IN YOUR PRACTICE

WHEN the Viso is taken from its shipping carton, *quality* of appearance is immediately apparent. The attractive mahogany case and black and gold control panel blend into a handsome appearance which, in itself, is actually an operating advantage, since it helps to reduce apprehensiveness in "new" ECG patients.

The first days of your use of the Viso clearly reveal its simple, quickly learned operation. And, as the days of the "trial period" go by, other features of this instrument become obvious: freedom from "AC" interference, complete stability of operation, "rugged" nature of Viso construction, easy portability of the instrument.

In reviewing the many advantages of Viso ownership, a thought about future service and supplies may occur to you. For Sanborn owners, service is typified in the informative, bi-monthly Technical Bulletin sent free of charge to all Sanborn owners . . . by capably staffed Branch Offices and Service Agencies in *42 cities* throughout the country . . . and by Sanborn's reputation as a manufacturer of precision medical diagnostic instruments since 1917.

***Sanborn Company offers you a Viso-Cardiette to use in your own practice for 15 days — without cost or obligation — to let your own experience decide IF an ECG would be useful to you, and if so, WHICH one.**

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Scientific Exhibits worthy of real study and helpful and time-saving Technical Exhibits

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relaxes both mind and muscle

for the average patient in everyday practice

- well suited for prolonged therapy
- well tolerated, nonaddictive, essentially nontoxic
- no blood dyscrasias, liver toxicity, Parkinson-like syndrome or nasal stuffiness
- chemically unrelated to chlorpromazine or reserpine
- does not produce significant depression
- orally effective within 30 minutes for a period of 6 hours

Indications: **anxiety and tension states, muscle spasm.**

THE ORIGINAL MEPROBAMATE

Miltown®

Tranquilizer with muscle-relaxant action

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2-methyl-2-n-propyl-1,3-propanediol dicarbamate—U.S. Patent 2,724,720

SUPPLIED: *400 mg. scored tablets. Usual dose: 1 or 2 tablets t.i.d.*

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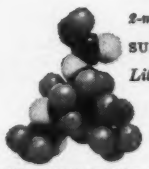

THE MILTOWN MOLECULE

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ABATE offers the

MOST EFFECTIVE RATIO

of levo-dextro amphetamines for therapy in obesity

- *A Higher Degree of Safety, Less Side Effects*
- *More Effective Control in Curbing Appetite and Causing Weight Loss*
- *With the Logical Addition of Vitamins*

In a series of 264 cases:

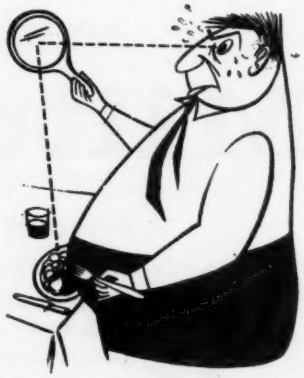
"It is apparent that the 1:3 levo/dextro combination of amphetamines had a more pronounced effect on weight loss as well as on appetite than the 1:1 levo/dextro combination."[1]

"The incidence of toxicity or side reactions from the 1:3 levo/dextro combination was relatively small."[1]

Each scored ABATE tablet contains

dl Amphetamine Phosphate	5 mg.
Dextro-Amphetamine Phosphate	5 mg.
Thiamin Hydrochloride	5 mg.
Riboflavin	1 mg.
Niacinamide	3 mg.

ABATE is packaged in bottles of 100.



1. Freed, S.C., and Mixel, M.: The Use of Amphetamine Combinations for Appetite Suppression, Annals of Int. Med. Vol. 36, No. 6, 1492, 1952.

SAMPLES TO PHYSICIANS ON REQUEST

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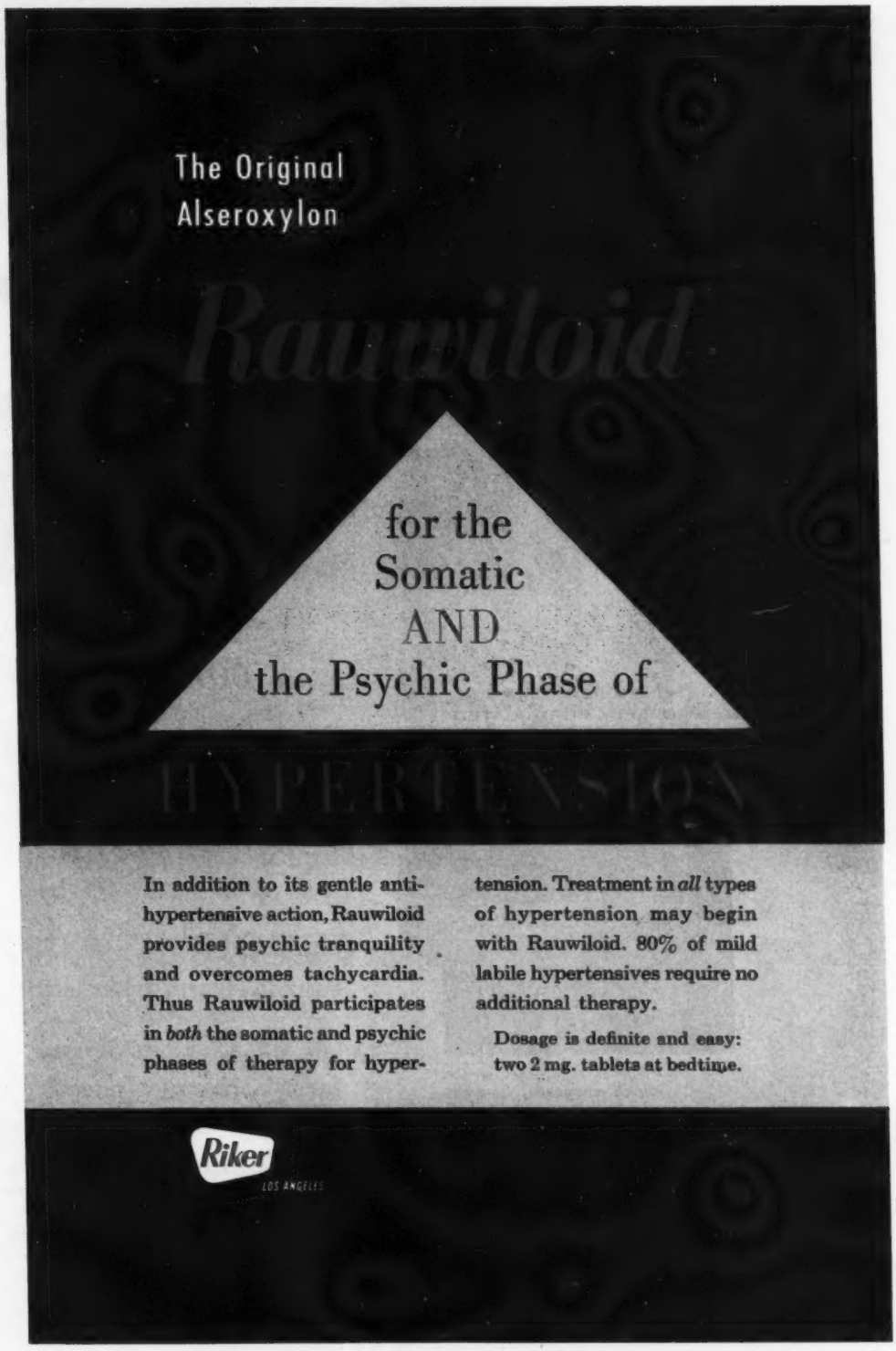
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Alseroxylon
Rauwiloid
for the
Somatic
AND
the Psychic Phase of
HYPERTENSION
In addition to its gentle anti-hypertensive action, Rauwiloid provides psychic tranquility and overcomes tachycardia. Thus Rauwiloid participates in *both* the somatic and psychic phases of therapy for hypertension. Treatment in *all* types of hypertension may begin with Rauwiloid. 80% of mild labile hypertensives require no additional therapy.
Dosage is definite and easy: two 2 mg. tablets at bedtime.
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LOS ANGELES

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For Pain-Free

of everyday

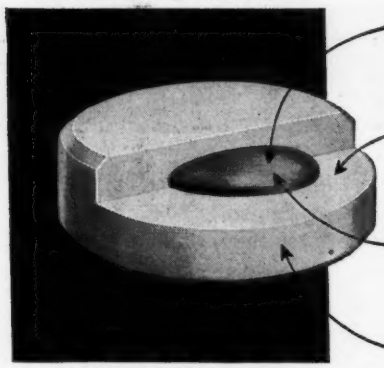
In "Rheumatism"*

Multiple

TEMP

combine:

THE PROPER FORMULA
PROPERLY FORMULATED



PREDNISOLONE (*1 mg.*)

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ASPIRIN (*0.3 Gm.*)

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ASCORBIC ACID (*50 mg.*)

+

ANTACID (*0.2 Gm.*)

Physical separation of the steroid component from the aluminum hydroxide as provided by the Multiple Compressed Tablet construction assures full potency and stability of prednisolone.

* **Early rheumatoid arthritis**
Rheumatoid spondylitis
Osteoarthritis
Still's disease
Psoriatic arthritis
Bursitis
Synovitis
Tenosynovitis
Myositis
Fibrositis
Neuritis

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Compressed Tablets

TEMPOGEN®

..... for anti-inflammatory, anti-rheumatic benefits *at effective low dosage.*

..... for analgesia plus additional anti-rheumatic activity.

..... for anti-stress support that guards against adrenal ascorbic acid depletion.
(Ascorbic Acid present as 60 mg. Sodium Ascorbate.)

..... dried aluminum hydroxide gel minimizes the possibility of gastric distress.

DOSAGE: *1-4 TEMPOGEN Tablets t.i.d. or q.i.d. (TEMPOGEN Forte, 1 or 2 tablets t.i.d. or q.i.d.) for one or two weeks. Then lower by 1 tablet every four or five days to maintenance level.*

SUPPLIED: *TEMPOGEN and TEMPOGEN Forte —in bottles of 100 Multiple Compressed Tablets. (TEMPOGEN Forte provides 2 mg. of prednisolone.)*

MSD

MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
PHILADELPHIA 1, PA.

TEXAS MEDICAL ASSOCIATION

OFFICIAL "TRUE GROUP" PROGRAM

1. Premium for any policy term (Annual or Semi-Annual) is determined by three factors:
   (a) Day of disability upon which benefits begin;
   (b) Amount of monthly benefit;
   (c) Member's age at the beginning of that policy term.
2. Only members under age 60 are eligible to enroll.
3. Premiums for members ages 60 to 69 apply only to renewal policy terms.
*4. All applications are individually underwritten.

DISABILITY INCOME PROTECTION

Maximum duration for Monthly Benefits payable under all Policies is:

1. Total Accident Disability—**LIFETIME**
2. Partial Accident Disability—**THREE MONTHS**
3. Total Sickness Disability—**THREE YEARS**

Policy No. 1 Pays monthly benefit beginning with 1st day of accident or 8th day of sickness disability.

Monthly Benefit	Under Age 40		Ages 40-44		Ages 45-49		Ages 50-54		Ages 55-59		Ages 60-64		Ages 65-69	
	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual
$200	$ 68.50	$ 34.25	$ 76.50	$ 38.25	$ 85.00	$ 42.50	$ 93.00	$ 46.50	$105.00	$ 52.50	$109.00	$ 54.50	$113.50	$ 56.75
300	99.00	49.50	111.50	55.75	123.50	61.75	135.50	67.75	154.00	77.00	160.00	80.00	166.00	83.00
400	129.50	64.75	146.00	73.00	162.00	81.00	178.50	89.25	203.00	101.50	211.00	105.50	219.00	109.50
600	183.00	91.50	215.00	107.50	239.50	119.75	264.00	132.00	300.50	150.25	312.50	156.25	325.00	162.50

Policy No. 2 Pays monthly benefit beginning with 31st day of accident or sickness disability.

Monthly Benefit	Under Age 40		Ages 40-44		Ages 45-49		Ages 50-54		Ages 55-59		Ages 60-64		Ages 65-69	
	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual
$200	$ 56.50	$ 28.25	$ 63.00	$ 31.50	$ 69.50	$ 34.75	$ 76.00	$ 38.00	$ 85.50	$ 42.75	$ 89.00	$ 44.50	$ 92.00	$ 46.00
300	80.50	40.25	90.50	45.25	100.50	50.25	110.00	55.00	124.50	62.25	129.50	64.75	134.50	67.25
400	105.00	52.25	118.00	59.00	131.00	65.50	144.00	72.00	163.50	81.75	170.50	85.25	177.00	88.50
600	154.00	77.00	173.50	86.75	193.00	96.50	212.50	106.25	242.00	121.00	251.50	125.75	261.50	130.75

Policy No. 3 Pays monthly benefit beginning with 181st day of accident or sickness disability.

Monthly Benefit	Under Age 40		Ages 40-44		Ages 45-49		Ages 50-54		Ages 55-59		Ages 60-64		Ages 65-69	
	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual	Annual	Semi-Annual
$200	$ 42.00	$ 21.00	$ 46.50	$ 23.25	$ 51.50	$ 25.75	$ 56.00	$ 28.00	$ 63.00	$ 31.50	$ 65.00	$ 32.50	$ 67.50	$ 33.75
300	59.50	29.75	66.50	33.25	73.50	36.75	80.00	40.00	90.50	45.25	94.00	47.00	97.50	48.75
400	76.50	38.25	86.00	43.00	95.00	47.50	104.50	52.25	118.00	59.00	123.00	61.50	127.50	63.75
600	111.50	55.75	125.00	62.50	139.00	69.50	153.00	76.50	173.50	86.75	180.50	90.25	187.50	93.75

* NEW MEMBERS

New members of the Medical Profession may enroll regardless of medical history, provided application is made for the insurance during the first year of membership in the Texas Medical Association. However, an impaired risk may be limited to $200.00 per month benefits.

(Optional) HOSPITALIZATION—$15.00 DAILY

If hospitalization is included, *your weekly benefits are increased by $105.00* ($15.00 daily) for four months while confined to the hospital. These benefits are paid directly to you and not the hospital regardless of other hospitalization insurance. *These benefits begin immediately WITH ALL POLICIES.*

Annual.....$18.00 Semi-Annual.....$9.00

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TEXAS MEDICAL ASSOCIATION, AUSTIN, TEXAS

FOR IMMEDIATE EFFECT!

'Thorazine' should be administered discriminately and, before prescribing, the physician should be fully conversant with the available literature.

always carry 'Thorazine' Ampuls in your bag

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.

'LANOXIN' brand DIGOXIN

formerly known as Digoxin 'B. W. & Co.'®

The new name has been adopted
to make easier for everyone
the distinction between
Digoxin and Digitoxin.

Now simply write: 'Lanoxin' Tablets 0.25 mg. or 0.5 mg.
'Lanoxin' Elixir Pediatric, or
'Lanoxin' Injection

to provide the unchanging safety and predictability afforded by the uniform potency, uniform absorption, brief latent period and optimum rate of elimination of this crystalline glycoside.

Tablets: *0.25 mg. (white) and 0.5 mg. (green)*
Elixir Pediatric: *0.05 mg. in each cc.*
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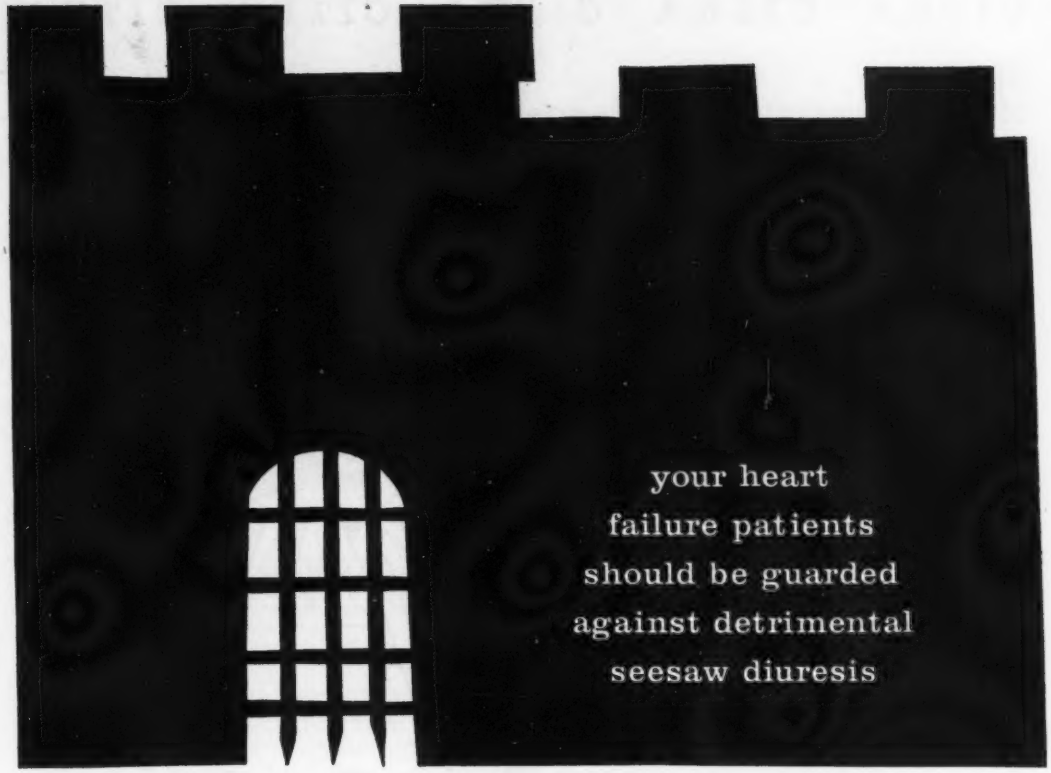

PATIENTS IN FAILURE NEED AN ORGANOMERCURIAL

Limiting dosage to once daily to avoid refractoriness, or omitting alternate days to circumvent gastrointestinal irritation—necessary with some diuretics—results in a seesaw of diuresis with fluid reaccumulation and recurrent strain on the already failing heart.

With the organomercurials, dosage is individualized and administered as needed, to produce sustained, dependable diuresis.

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NEOHYDRIN®

BRAND OF CHLORMERODRIN (18.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA EQUIVALENT TO 10 MG. OF NON-IONIC MERCURY IN EACH TABLET)

a standard for initial control of severe failure

MERCUHYDRIN® SODIUM

BRAND OF MERALLURIDE INJECTION

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CITRA CITRA CITRA CITRA CITRA

CITRA CITRA CITRA CITRA CITRA

For common colds, coughs, hay-fever and allergies—Citra capsules or syrup!

CITRA

5-way action

1. *Restore and maintain capillary integrity* **2.** *Decongestant*
3. *Antihistaminic* **4.** *Analgesic* **5.** *Antipyretic (capsules) Expectorant (syrup)*

Hesperidin and Vitamin C aid in restoring and preserving normal capillary function, important in the control of colds and allergies. Phenylephrine HCl. assists in clearing nasal and bronchial tracts. Multiple anti-histamines alleviate undesirable side effects without reducing antihistamine effectiveness. For analgesic and antipyretic effect, the *capsules* contains a powerful "APC" group. For its analgesic effect, the *syrup* contains dihydrocodeinone, more potent than codeine, less constipating, with low addiction liability. Sedative expectorant action in the syrup is achieved with potassium chloride, sodium-free salt.

5-way approach

Each **CITRA CAPSULE** provides:

(1)	Hesperidin purified (Citrus Bioflavonoid)	100.0 mg.
	Vitamin C	50.0 mg.
(2)	Phenylephrine Hydrochloride	5.0 mg.
(3)	Prophenpyridamine Maleate	6.25 mg.
	Methapyrilene Hydrochloride	8.33 mg.
	Pyrilamine Maleate	8.33 mg.
(4 & 5)	Salicylamide	200.0 mg.
	Acetophenetidin	120.0 mg.
	Caffeine Alkaloid	30.0 mg.

Each 5 cc. (teaspoonful) of **CITRA SYRUP** contains:

(1)	Hesperidin Methyl Chalcone (Citrus Bioflavonoid)	8.33 mg.
	Vitamin C	30.0 mg.
(2)	Phenylephrine Hydrochloride	2.5 mg.
(3)	Prophenpyridamine Maleate	2.5 mg.
	Pyrilamine Maleate	3.33 mg.
(4)	Dihydrocodeinone Bitartrate	1.66 mg.
(5)	Potassium Citrate	150.0 mg.

In a flavored syrup base. Alcohol 2%
Exempt Narcotic

PROFESSIONALLY PROMOTED, ONLY

Both Citra formulas available at all prescription pharmacies. Citra Capsules packaged in bottles of 100 and 1000. Citra Syrup in pints and gallons. *Literature on request.*

BIBLIOGRAPHY:

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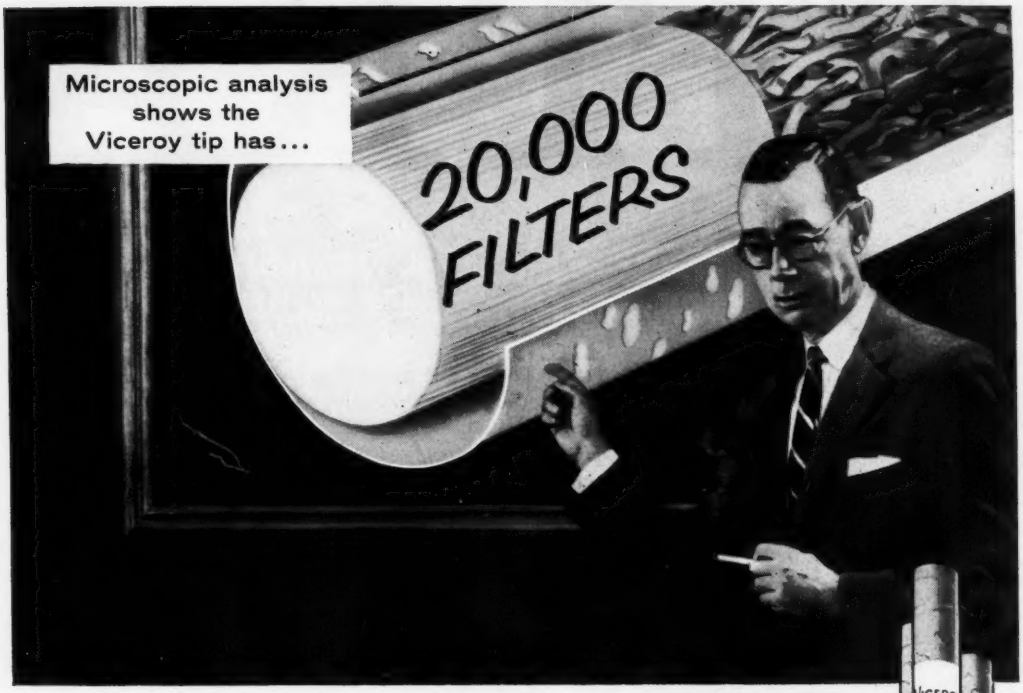
HERE'S WHY SO MANY DOCTORS NOW SMOKE AND RECOMMEND

VICEROY



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AS THE OTHER TWO LARGEST-SELLING FILTER BRANDS

For the Smoothest Taste in Smoking!

COMPARE! HOW MANY FILTERS IN YOUR FILTER TIP? (REMEMBER—THE MORE FILTERS THE SMOOTHER THE TASTE!)
Viceroy
Brand B
Brand C
TWICE AS MANY FILTERS
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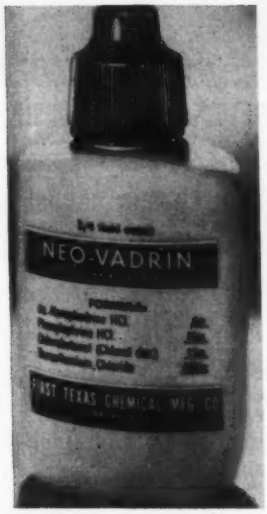

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*Fishberg, A. M.: Hypertension and Nephritis, ed. 5, Philadelphia, Lea & Febiger, 1954, pp. 177-178.

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Surgical Anatomy & Clinical Surgery, Two Weeks, March 4.
Surgical Pathology, 2 or 4 Weeks, by appointment.
Basic Principles in General Surgery, Two Weeks, January 14.
Fractures & Traumatic Surgery, Two Weeks, March 11.
Anesthesia, 2 or 4 Weeks, by appointment.

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Vaginal Approach to Pelvic Surgery, One Week, February 4.
General & Surgical Obstetrics, Two Weeks, Feb. 25.

MEDICINE—Electrocardiography & Heart Disease, Two-Week Basic Course, March 11.
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Dermatology, Two Weeks, May 6.
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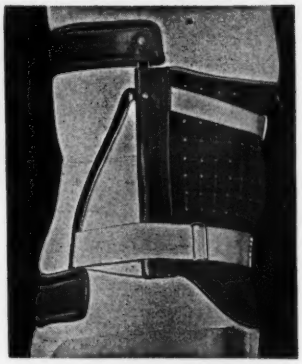

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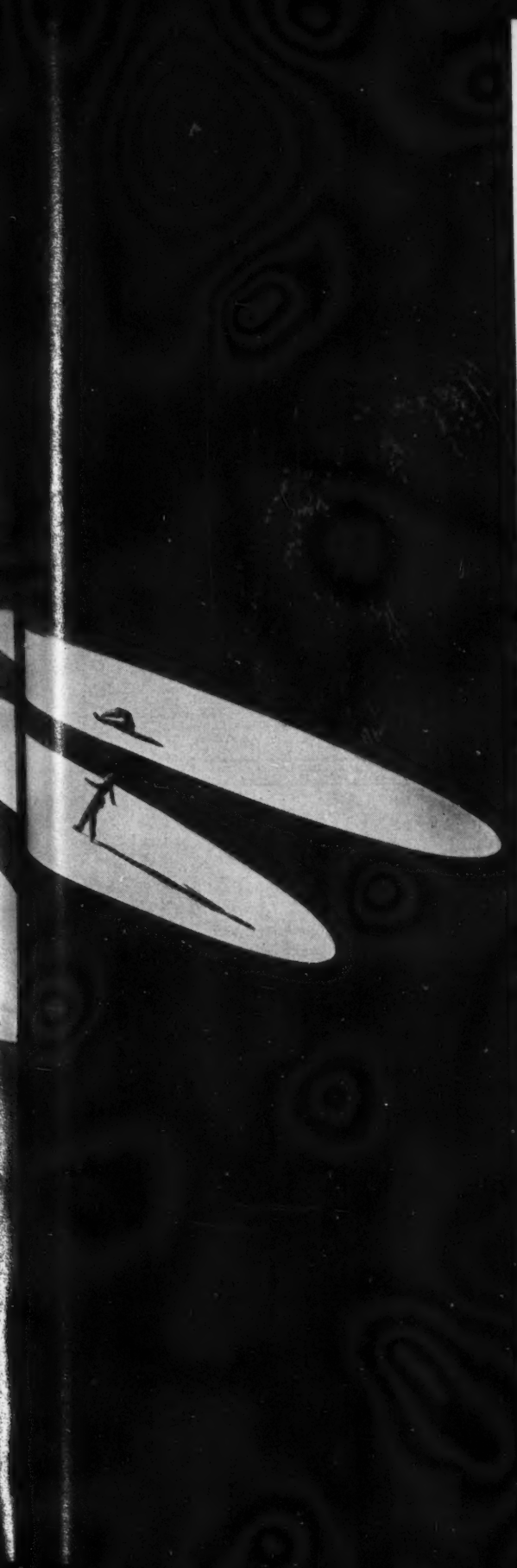

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References:
1. Finland, M., *et al.*: *J.A.M.A.* 154:561 (Feb. 13) 1954.
2. Prigot, A. and Marmell, M. *Antibiotics and Chemotherapy* 4:1117 (Oct.) 1954.
3. Trafton, H. and Lind, H.: *Idem* 4:697 (June) 1954.
4. English, A., *et al.*: *Idem* 4:441 (April) 1954.

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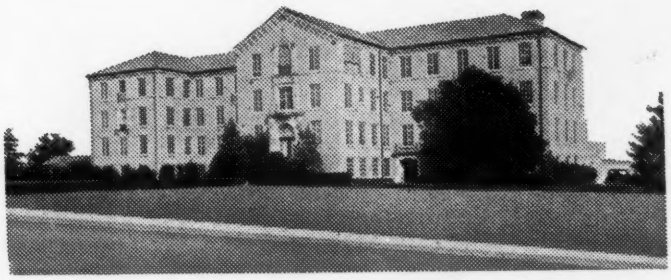

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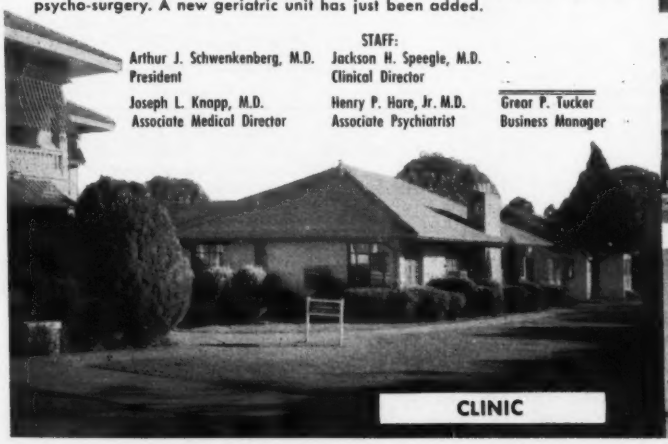

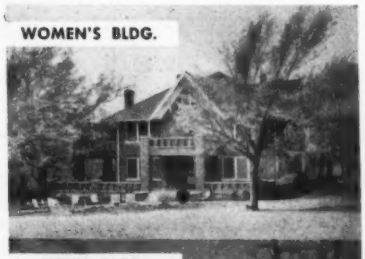

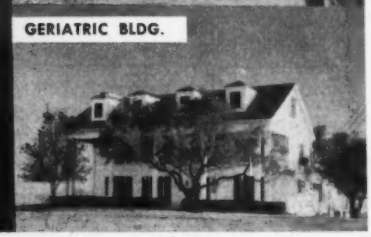

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★ Physicians Wanted

WANTED—General practitioner for association with two other doctors in clinic in a small town. Better than average salary with chance for partnership later. Adjoining hospital facilities. Address Box 866, care Texas State Journal of Medicine, 1801 North Lamar Blvd., Austin, Texas.

WANTED—EENT department head in six-doctor clinic in Central Texas. Ophthalmologist preferable. Board certification desirable, not necessary. Address Box 878, care Texas State Journal of Medicine, 1801 North Lamar Blvd., Austin, Texas.

OPPORTUNITY—For general practitioner who is primarily interested in medicine or pediatrics; six-doctor clinic in town of 25,000, with area of 60,000 population. Four general practitioners have recently built a modern clinic. Each doctor has an office and two examining rooms. Equipment includes x-ray, laboratory, cystoscopic, physiotherapy, operating room, and recovery rooms. These men have their individual practices and share the facilities. New 100-bed City-County Hospital open staff is available. Located Corsicana, Navarro County (North Central Texas). Address Dr. R. L. Campbell, 205 S. 15th Street, Corsicana, Texas.

WANTED—The following specialists to join our group in Dallas on independent basis; E N T man, Ophthalmologist, Dermatologist, Proctologist, Orthodontist. The group at present time consists of two internists, three pediatricians, urologist, surgeon, orthopedist, and two OB and GYN men and one gynecologist. All men must have their boards or be board eligible. Address Box 909, care of Texas Medical Association, 1801 North Lamar Blvd., Austin, Texas.

WANTED—Replacement for draft-eligible physician in small East Texas town near Tyler. Good equipment, small investment, no opposition. Address W. J. Garrett, M.D., Box 188, Van, Texas.

WANTED—General practitioner for association with two other doctors in a busy Gulf Coast clinic; area prosperous regardless of drouth. Generous salary to begin with. Reply care of Texas State Journal of Medicine, Box 916, 1801 Lamar Blvd., Austin, Texas.

INDUSTRIAL PHYSICIAN WANTED—Staff physician, Medical Department of large chemical plant on Texas coast. Prefer young man with military obligation completed. Experience not mandatory provided applicant has genuine interest in industrial medicine and desires career in that field. Starting salary $10,000.00. Give personal and professional data first letter. Reply care Box 918, Texas State Journal of Medicine, 1801 Lamar Blvd., Austin, Texas.

WANTED — Young physician to replace member of 3-man clinic in South Texas rural town. All members do general practice. Laboratory and x-ray facilities available in building. Office space, utilities, office assistant provided. Practice to start on percentage basis with net guarantee remuneration of $9,000.00 first year. Reply care Box 919, Texas State Journal of Medicine, 1801 Lamar Blvd., Austin, Texas.

WANTED — Orthopedic Surgeon and Internist for association with two other doctors in clinic. Guaranteed monthly salary, generous and percentage of collections. Reply to C. J. Paternostro, M. D., 426 Medical Arts Building, Dallas, Texas.

WANTED—General practitioner, under 35 years of age, looking for a permanent location, to join a five-man clinic group. Starting salary guaranteed; permanent association to the right man. Address Medical Arts Clinic, Peyton T. McKinley, Business Manager, 1318-20 Main Street, Lubbock, Texas.

WANTED—General practitioner for association with two other doctors in clinic in small town. Salary and Commission to start, with possibility of partnership later. Adjoining hospital facilities. Address 400 E. Main, Hamilton, Texas.

WANTED—General practitioner for association with established physician. Excellent hospital facilities in prosperous Gulf Coast area. Salary first, then permanent arrangement if services prove satisfactory. Address replies to Box 922, Texas State Journal of Medicine, 1801 Lamar Blvd., Austin, Texas.

★ Situations Wanted

WANTED—Surgeon, age 33, certified by the American Board of Surgery, desires to join a clinic group. Must be assured of a suitable income before moving from present location where he has practiced for three years. Reply care Box 920, Texas State Journal of Medicine, 1801 Lamar Blvd., Austin, Texas.

SITUATION WANTED — Obstetrician and Gynecologist; age 31; family. Board eligible. University hospital trained. At present chief gynecology service large Army hospital. Desires association with an individual, group, or industrial plan—preference in Texas. Spanish spoken fluently. Licensed: Texas, Georgia, Illinois, and Ohio. Available June 1957. Reply care of Texas State Journal of Medicine, Box 921, 1801 N. Lamar Blvd., Austin, Texas.

WANTED—M. D., age 32, desires association with surgeon, general practitioner doing surgery, or with group. Married. Two years surgical training. Military obligation completed, available July, 1957. Will consider taking practice of retiring M. D. Address replies to M. D., 18 Perry Street, Petersburg, Virginia.

WANTED—Board-qualified Anesthesiologist desires general practice association with group with emphasis on anesthesia; or would consider coverage of anesthesia for group that would allow own private general practice in afternoons. Young, family, veteran, Texas graduate and license. Address replies to Box 923, Texas State Journal of Medicine, 1801 Lamar Blvd., Austin, Texas.

OPPORTUNITIES WANTED—THE FOLLOWING SPECIALISTS ARE AVAILABLE FOR OPPORTUNITIES IN THE SOUTHWEST: (a) INTERNIST; Diplomate; six years' private practice; now completing year's residency cardiovascular disease qualifying him for subspecialty Board in Cardiovascular Disease. (b) SURGEON; Certified, American Boards of Surgery and Thoracic Surgery; three years, assistant, nationally prominent surgeon, since 1950, chief surgeon, teaching hospital. (c) RADIOLOGIST; six years' private practice before specializing; since completing training, on staff, one of leading clinics; Diplomate (Diagnostic and Therapeutic Radiology); qualified radioisotopes; licensed Texas, California. For further information, please write Burneice Larson, Medical Bureau, 900 North Michigan Avenue, Chicago, Illinois.

★ For Sale or Exchange

FOR SALE—Thriving practice in county seat town in Mid-West Texas for sale to anyone who will buy equipment and supplies on hand. Will introduce. Receptionist will remain. Address reply to Box 850, care Texas State Journal of Medicine, 1801 N. Lamar Blvd., Austin, Texas.

FOR LEASE: Small clinic in good community center, 2037 West Alabama, Houston, Texas available after November 1, 1956. Air-conditioned, 2400 square feet, price $250.00 per month for 3 year lease. Established general practice. Shown by appointment only. Address P. O. Box 529, Houston 1, Texas.

FOR SALE—Large general and surgical practice, with two-story, brick, year-around air-conditioned building located in heart of Longview. Twenty rooms and five lavatories. Spacious rooms for one to four doctors. Two excellent open-staff hospitals. Trade area population 75,000. Owner in location twenty-one years wishes to retire. Price $80,000. Address R. J. Van Sickle, M. D., 100 East Methvin Street, Longview, Texas.

WANTED TO BUY — Will purchase secondhand motor or hand-driven proctosigmoidoscopic table if in state of good repair. Address Medical Arts Clinic, Peyton T. McKinley, Business Manager, 1318-20 Main Street, Lubbock, Texas.

FOR SALE—Have just purchased doctor's clinic and equipment, and will sacrifice these duplicates for the following prices: Beck-Lee Cardi-All $550 list, for $350; Diathermy (Fischertherm Model 1500-C) $525 list, for $300, purchased 3 years ago, FCC approved; Castle Sterilizers—one 13 inch, one 17 inch—both several years old, good working order, $40 each; Bakelite X-Ray Developing Tank—filled only once, $40; Portable X-Ray Machine 25ma—takes good chests and extremities, reconditioned this month, wall cassette holder with it, tank thermometer, view box, and measuring stick, all for $500. Originally a $1200.00 machine. Write T. M. Trimble, M.D., Box 2871, Wylie, Texas.

WANTED TO BUY—Used medical equipment. All types, all makes, all models. Call, write, or wire M. Roth, 6710 Snider Plaza, Dallas, Texas. Phone RAndolph-3162.

FOR SALE — 100 MA General Electric x-ray machine with complete dark room and electrically tilted table — nearly new, $2250; 5 hospital beds, complete—$70.00 each; 6 steel bassinets complete—$20 each; 1 bed rail, $10; one McKesson B.M.R. machine—$75.00; one suction pressure machine in cabinet—$125; one Castle autoclave and sterilizer combination in cabinet, electric—$400; one Castle twin-lite, operating, on stand—$135; one Leitz photrometer — $75; one microscope, monocular, superior lens system—$150; one Bannanometer—250 mm—$30; stainless steel litter on wheels, with pad—$100; stainless steel Mayo rack —$35; six walnut armchairs—nearly new—$25 each; one oxygen regulator and humidifier—$35; one oxygen tent—$85; one electrocardiograph, worthless—you price it. Numerous small items. Will deliver heavy items reasonable distance. Write M. F. Green, Box 8, Farwell, Texas. Phone 6508, Farwell, or 4-5402 Clovis, New Mexico.

FOR SALE—200 MA Rotating Anode, Picker x-ray, motor-driven table, excellent condition, complete darkroom. At Lufkin, Texas. Owner taking residency—needs money. Write Dr. John C. Koch, 4511 Paris Avenue, New Orleans, Louisiana.

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FOR SALE——At a bargain, a well-equipped 25-bed hospital and clinic, located in Central Texas, town of 1800, good surrounding territory, no opposition. Place has been in business for twenty years. Just clinical work and general practice could be done. Owner wishes to retire. Reply to H. J. Swepston, M. D., Rosebud, Texas.

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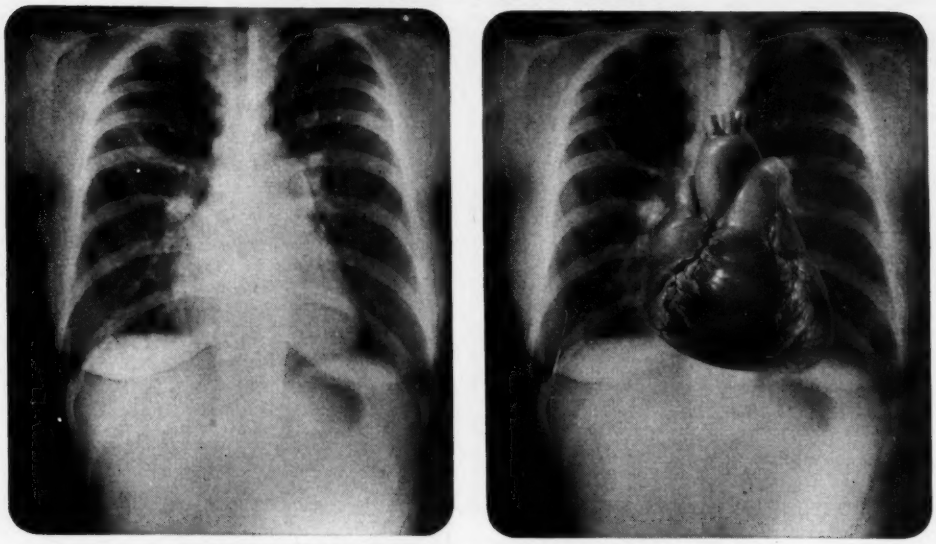

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*EHRLICH, J.C.: ARIZONA MED. 13:239 (JUNE) 1955. BIBLIOGRAPHY FURNISHED ON REQUEST

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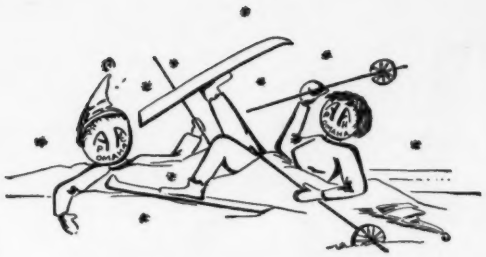

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*Modell, W.: The Relief of Symptoms, Philadelphia, W. B. Saunders Company, 1955, pp. 265-266.

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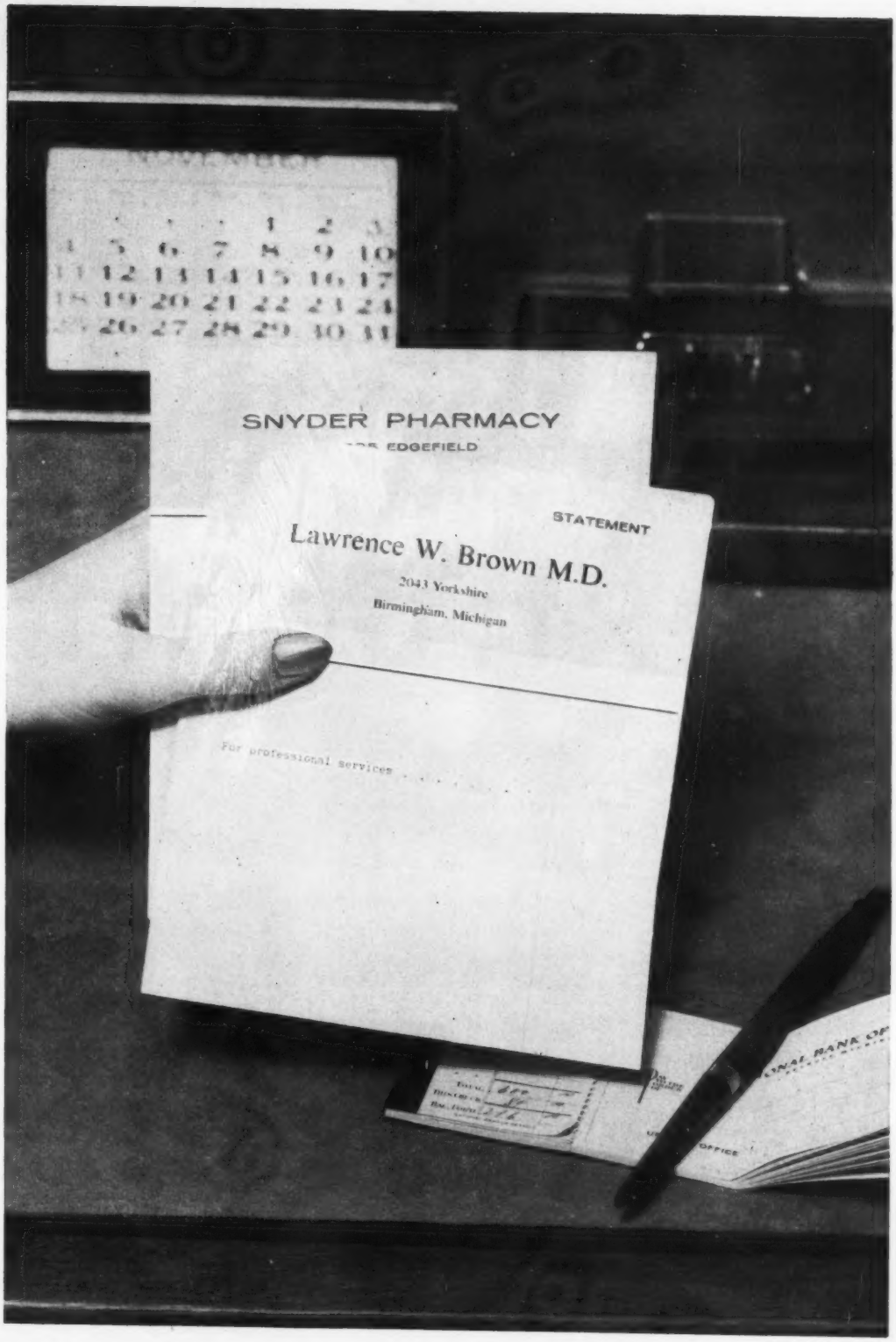
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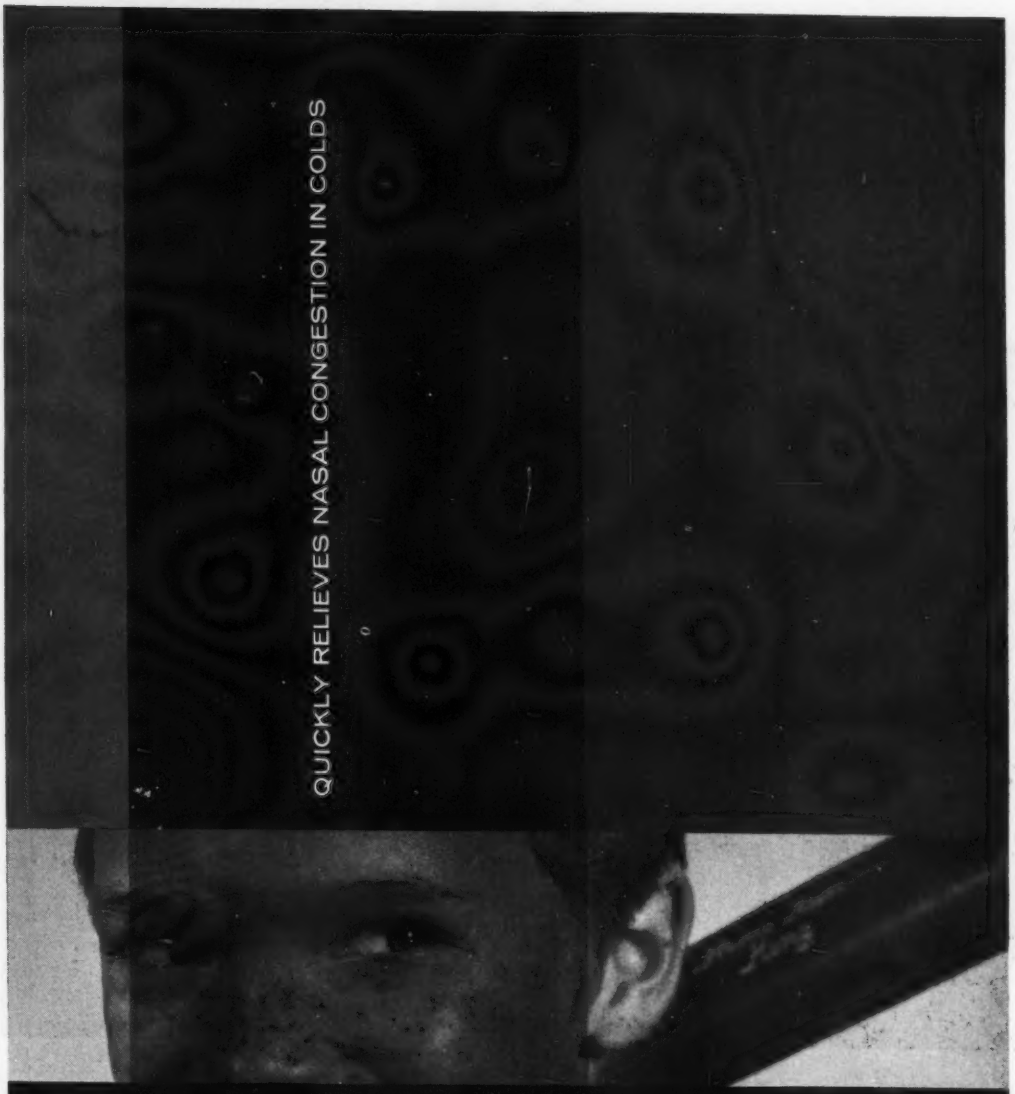

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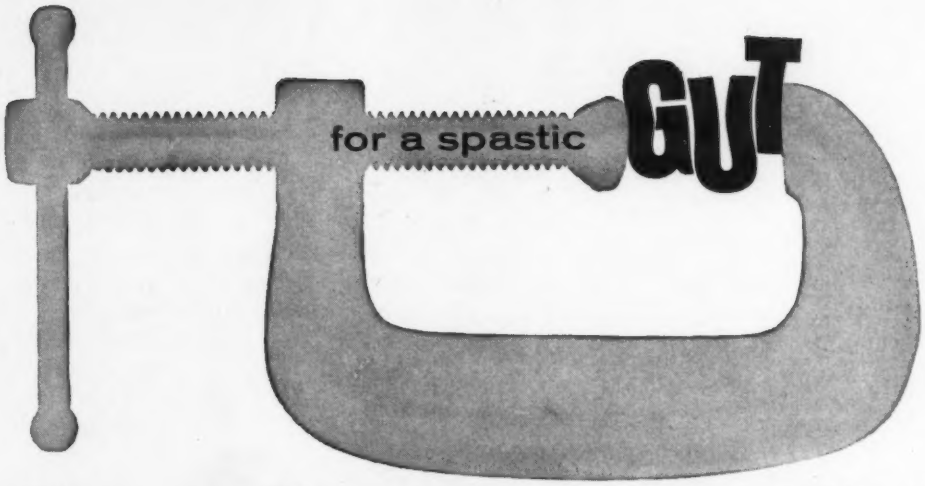

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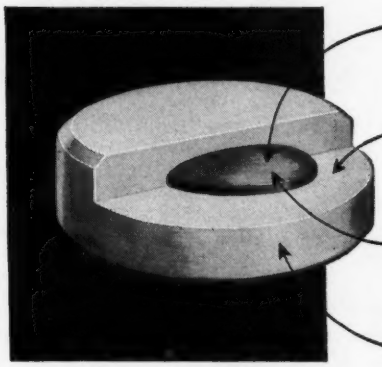

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..... for analgesia plus additional anti-rheumatic activity.

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DOSAGE: *1-4 TEMPOGEN Tablets t.i.d. or q.i.d. (TEMPOGEN Forte, 1 or 2 tablets t.i.d. or q.i.d.) for one or two weeks. Then lower by 1 tablet every four or five days to maintenance level.*

SUPPLIED: *TEMPOGEN and TEMPOGEN Forte —in bottles of 100 Multiple Compressed Tablets. (TEMPOGEN Forte provides 2 mg. of prednisolone.)*

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Conference Headquarters — Municipal Auditorium
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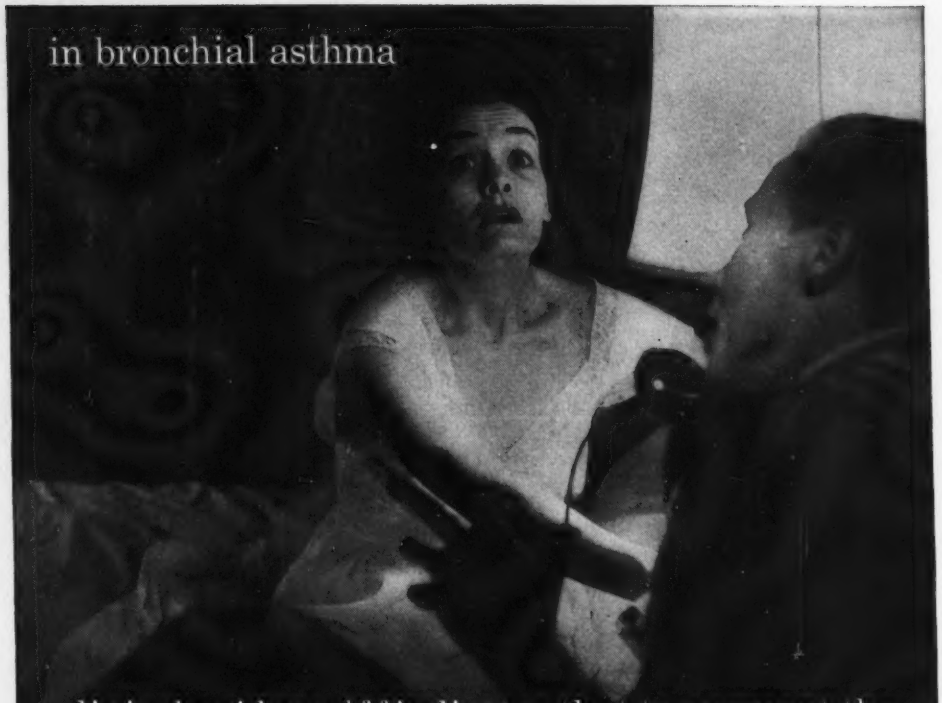

clinical evidence[1,2,3] indicates that to augment the therapeutic advantages of the "predni-steroids" antacids should be routinely co-administered to minimize gastric distress

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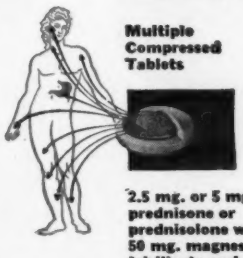

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References: 1. Boland, E. W., *J.A.M.A.* 160:613, (February 25,) 1956. 2. Margolis, H. M. *et al, J.A.M.A.* 158:454, (June 11,) 1955. 3. Bollet, A. J. *et al, J.A.M.A.* 158:459, (June 11,) 1955.

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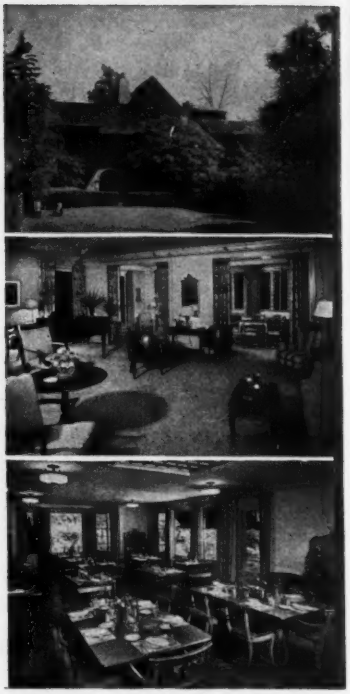

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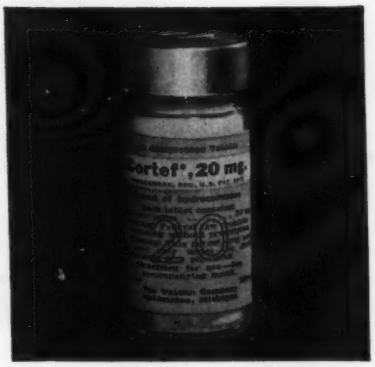
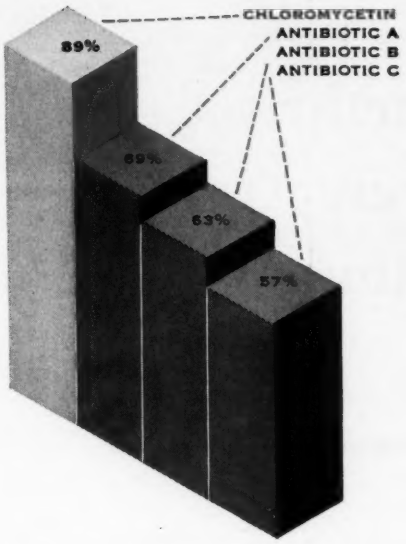
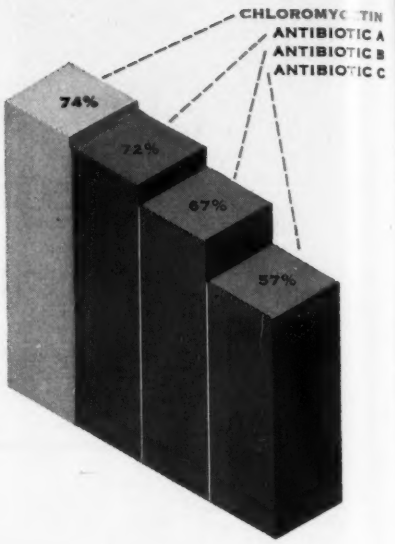


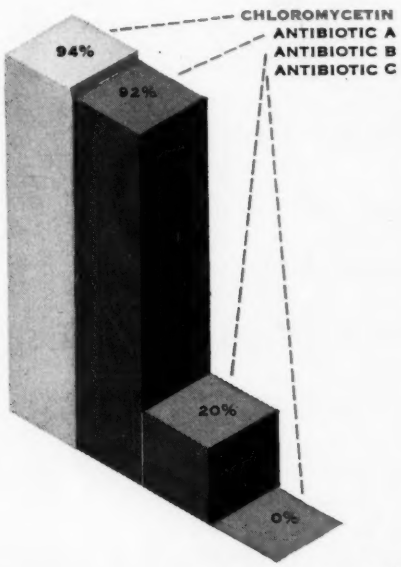
SENSITIVITY OF COMMON PATHOGENS TO CHLOROMYCETIN AND THREE OTHER MAJOR ANTIBIOTIC AGE



NONHEMOLYTIC MICROCOCCUS AUREUS
(363-418 STRAINS)



HEMOLYTIC MICROCOCCUS AUREUS
(729-776 STRAINS)



ESCHERICHIA COLI
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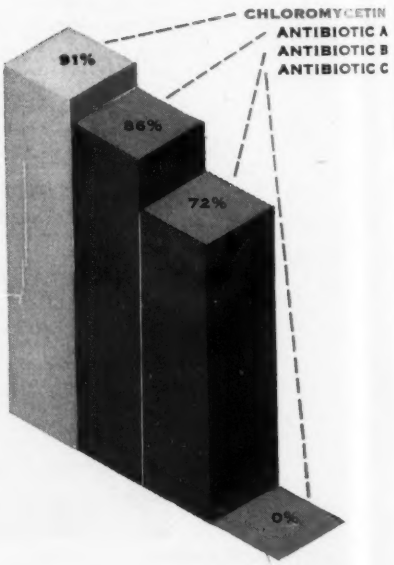

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References (1) Altemeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* **157**:305 (Jan. 22) 1955. (2) Austrian, R.: *New York J. Med.* **55**:2475 (Sept. 1) 1955. (3) Murphy, F. D., & Waisbren, B. A., *in* Murphy, F. D.: Medical Emergencies: Diagnosis and Treatment, ed. 5, Philadelphia, F. A. Davis Company, 1955, p. 557. (4) Weil, A. J., & Stempel, B.: *Antibiotic Med.* **1**:319, 1955. (5) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* **5**:365, 1955. (6) Kass, E. H.: *Am. J. Med.* **18**:764, 1955. (7) Tebrock, H. E., & Young, W. N.: *New York J. Med.* **55**:1159 (Apr. 15) 1955.

graph is adapted
n Altemeier, Cul-
son, Sherman, Cole,
un, & Fultz.[1]

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